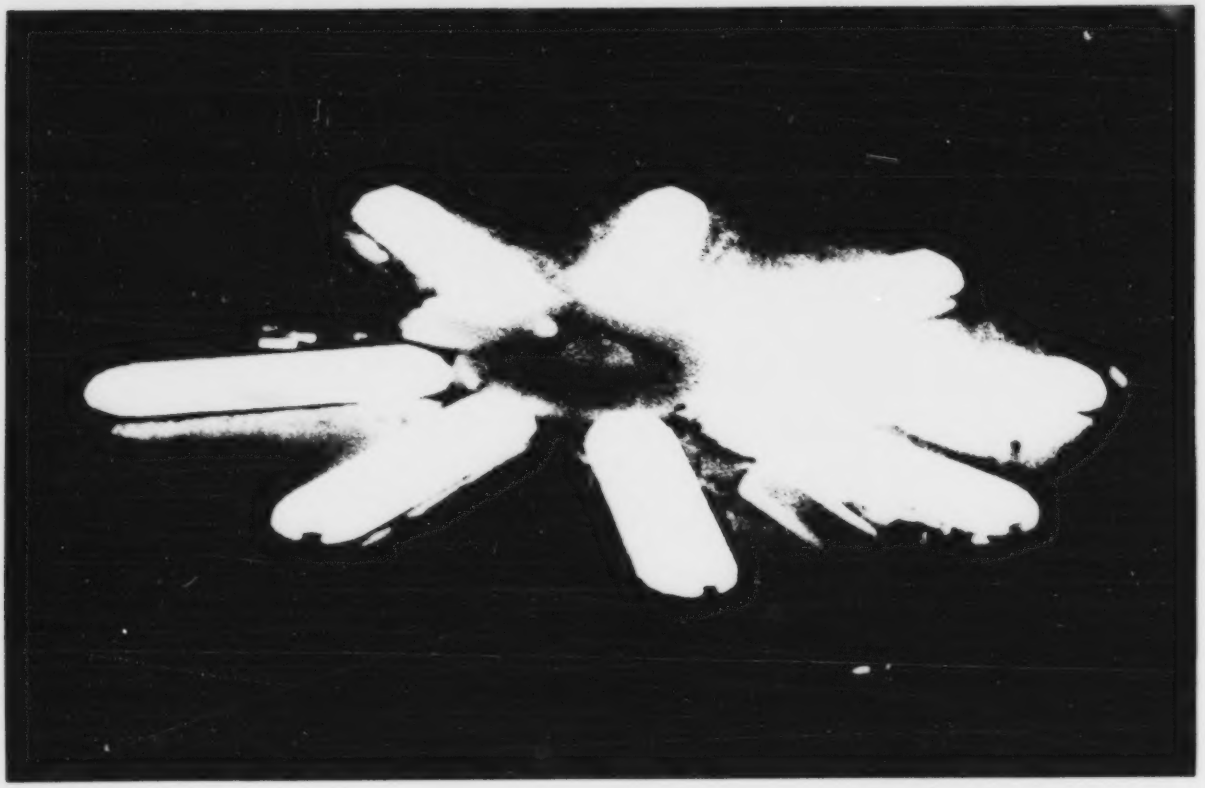
NEWFOUNDLAND AND LABRADOR

THE ECONOMY 1988



COVER:

Photo shows the Newfoundland Enviroponics greenhouse constructed near Mount Pearl. This high technology facility produces fresh produce for local and mainland markets. The high intensity lighting system used in the growing process produces a spectacular effect in the evening sky.

THE ECONOMY 1988

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Government House Leader

This second printing of THE ECONOMY 1988 contains minor content changes in addition to a number of editorial changes including a renumbering of the pages.

FOREWORD

THE ECONOMY is an annual publication which reviews the performance of the Newfoundland and Labrador economy in the previous year and assesses the outlook for the current year. The research, writing and co-ordination of an annual publication such as this is always a complex process and while every attempt has been made to include only the most up-to-date information available, the majority of statistical tables, diagrams and analyses contained in this report are based on data which were available as of February 19, 1988.

THE ECONOMY 1988 has been considerably enhanced by the excellent suggestions and willing contributions of a number of individuals. In particular, the staff of Economic Research and Analysis would like to thank: George Courage and the staff of the Newfoundland Statistics Agency; John E. Buckingham Sr., Buckingham Atlantic Limited; Harold Duffett, Standard Manufacturing Co. Ltd.; M.J. Woodman, Connie Hawkins, Canada Mortgage and Housing Corporation; Ann Marie Abbott, Cabinet Secretariat; Albert Williams, Treasury Board Secretariat; Tom Howley, Newfoundland Dockyard Corporation; Bob Davis, Glovertown Shipyard Ltd.; Basil Murphy, St. John's Real Estate Board; Nancy Smith, Royal LePage Real Estate Services Ltd.; Peter Baillee, Harold Hefferton, Transport Canada; Dave Fox, Leo Brown, Ports Canada; Ramsey Armitage, New Brunswick Transportation Commission; Owen Brown, Terra Transport; Jim Halon, Geri Lutz, Tom Beckett, Department of Transportation; Della Stevens, Maurice Sheppard, Mike Doyle, Ken Andrews, Paul Dean, Tony Burgess, Department of Mines; Bruce Boyd, Energy, Mines and Resources Canada; Cathy O'Neil, Elizabeth Lundrigan, Karl Sullivan, Les Dean, Department of Fisheries; Lois Sullivan, Gilbette Nolan, Anne Russell, Tim Hsu, Gemma Giovannini, Department of Fisheries and Oceans Canada; Jim Winter, Don Reid, Fishery Products International; Mike Handrigan, Fishing Industry Advisory Board; Bill Moyse, Canadian Saltfish Corporation; Steve Koplin, National Marine Fisheries Service; Jerome Peddle, NORDCO; Derek Yetman, Institute for Marine Dynamics; Robert Tipple, Board of Commissioners of Public Utilities; Robert Peters, Muhammad Nazir, Albert King, John Middlemiss, Gary Small, George Ross, Barry Garland, Robert Mercer, Ray Warren, Len Moores, Department of Forestry; Clyde Granter, Ron LeDrew, Matt Shinkle, Tony Patey, Harry Bishop, Clyde Woodward, Max Rullock, Nick Burggraaf, Renil Nanayakkara, Dave Hallett, Department of Development and Tourism; Brian McClay, Manon Dumais, Canadian Pulp & Paper Association; Laurie Cashin, Department of Regional and Industrial Expansion; Robert Pelley, Canadian Intergovernmental Conference Services; Ted O'Keefe, Ted Baugh, Offshore Petroleum Board; Kenneth Oakley, Canadian Petroleum Association; Russ Mellett, Conference Board of Canada; James Martin, Martin's Industrial Supply; Eric Patey, Marystown Shipyard Ltd.; Paul Timmins, Albright and Wilson; John Downton, Saga Communications; Christine Westcott, Newfoundland Energy Limited; Doug Trask, Newfoundland and Labrador Hydro; Gerry Colbert, Fortis Inc.; Richard Fuchs, Phil McCarthy, Chee Yow, Reg King, Department of Rural and Agricultural Development; Jim McDonald, Newfoundland Farm Products Corporation; Dave Collins, Central Dairies; Andrew Ploughman, Brookfield Ice Cream Limited; Brian Shaw, Sunshine Dairy Company; Jim Bursey, Blue Buoy Foods Limited; Dave Wilcock, Gallants Marine Fisheries Ltd. In addition, a number of individuals contributed to the development of the 'Inventory of Major Projects' which appears in the final pages of this publication.

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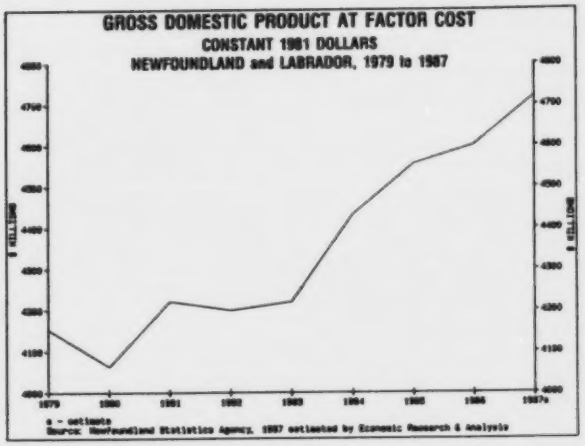
STATISTICAL INDICATORS

1979 - 1987

NEWFOUNDLAND AND LABRADOR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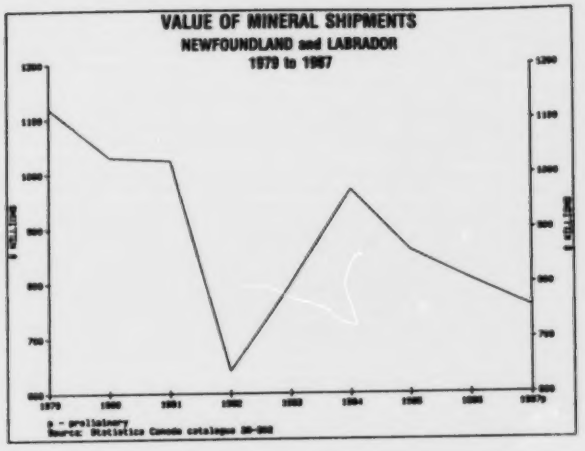
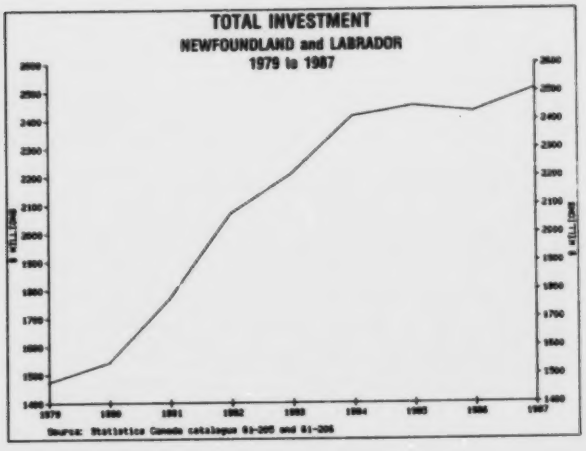
CONSTANT 1981 DOLLARS
NEWFOUNDLAND and LABRADOR, 1979 to 1987


VALUE OF MINERAL SHIPMENTS
NEWFOUNDLAND and LABRADOR
1979 to 1987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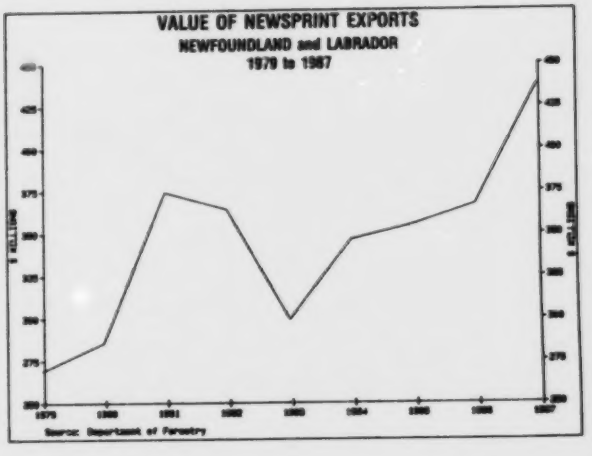
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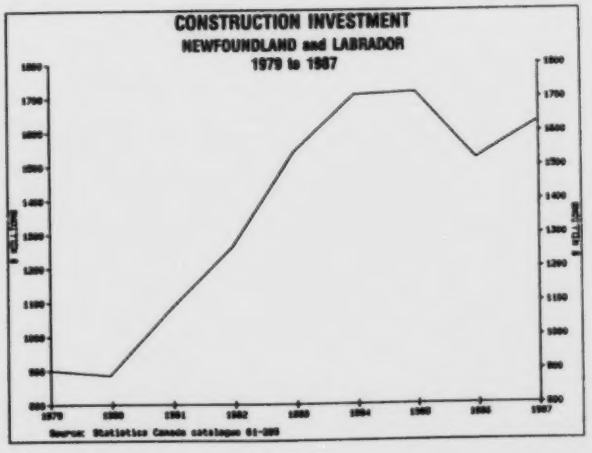
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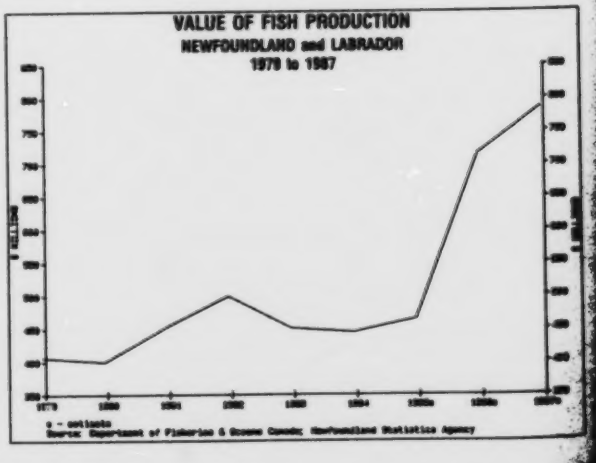
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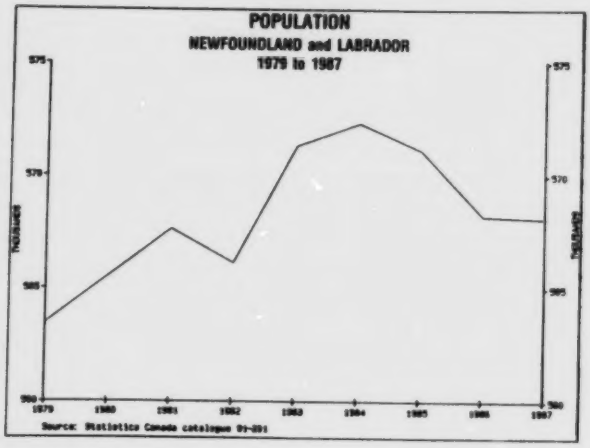
POPULATION
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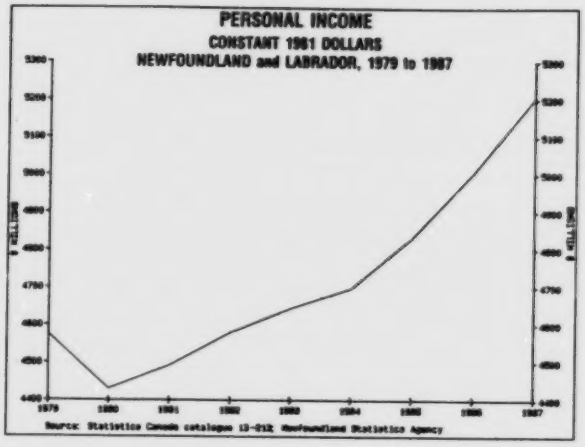
PERSONAL INCOME
CONSTANT 1981 DOLLARS
NEWFOUNDLAND and LABRADOR, 1979 to 1987
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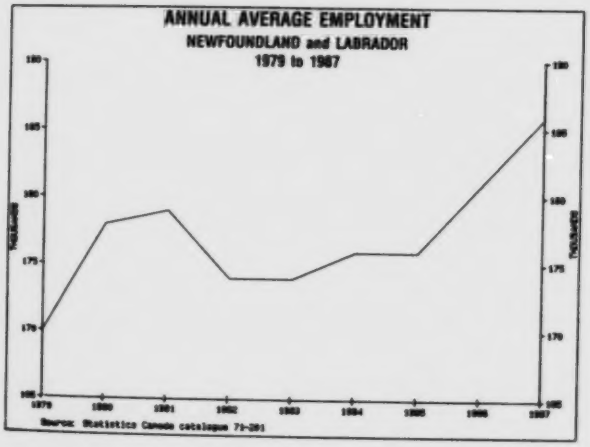
ANNUAL AVERAGE EMPLOYMENT
NEWFOUNDLAND and LABRADOR
1979 to 1987
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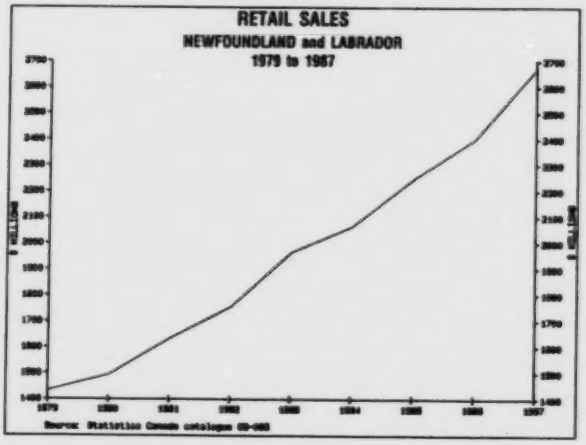
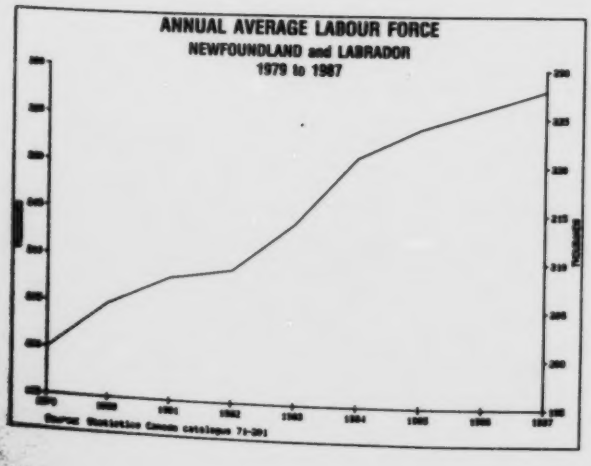
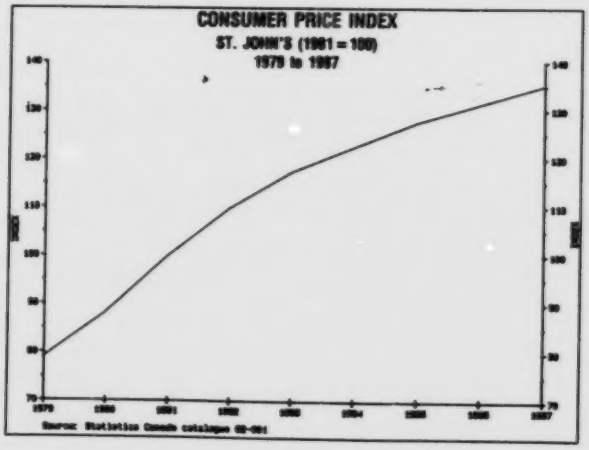

RETAIL SALES
NEWFOUNDLAND and LABRADOR
1979 to 1987


ANNUAL AVERAGE LABOUR FORCE
NEWFOUNDLAND and LABRADOR
1979 to 1987
Source: Statistics Canada catalogue 71-201


CONSUMER PRICE INDEX
ST. JOHN'S (1981 = 100)
1979 to 1987
Source: Statistics Canada catalogue 62-001

I. SUMMARY OF ECONOMIC PERFORMANCE DURING 1987

International and Canadian:

- Real economic growth continued in all of the major industrialized countries; the United States economy grew by 2.9 percent while the Canadian economy recorded the highest real growth rate of all the G-7 countries at 3.9 percent.

- Canada's inflation rate averaged 4.4 percent and interest rates remained fairly stable.

- The Canadian dollar appreciated in value against the United States dollar and depreciated against the currencies of major overseas economies.

- Employment in Canada grew by 2.8 percent and the unemployment rate fell to 8.9 percent.

- After rising sharply throughout much of the year, a worldwide stock market crash caused stock prices to plummet in October.

Newfoundland and Labrador:

- Continued strong performance in both the goods and service producing sectors resulted in real GDP growth of 2.6 percent. Most Provincial industries benefited from strong demand in both domestic and international markets.

- Employment increased by 5,000, on an annual average basis, for the second consecutive year. The 1.4 percentage point drop in the Province's unemployment rate was the largest such decline recorded by any Province.

- Rising levels of employment resulted in higher wages and salaries and led to a 7.4 percent increase in personal incomes. In real terms, the 4.4 percent increase in personal income was the largest since 1977.

- Consumer spending was boosted by high levels of consumer confidence and increased personal income; the value of retail trade grew by 11.3 percent.

- The agriculture industry experienced modest growth as total farm cash receipts grew by 3.5 percent. Also, Newfoundland Enviroponics Limited established a major hydroponics facility.

- The value of iron ore production decreased from 1986 and this was the major contributor to the 6.1 percent decline in the total value of mining industry production.

- Mineral exploration was at its highest level ever.

- Pulpwood production increased by 4.6 percent fueled by strong demand from the pulp and paper industry.

- The value of fish landings increased by nearly 36 percent, more than offsetting a slight decrease in the volume of landings.

- The manufacturing industry can be divided into three major components; namely, fish products, pulp and paper products, and 'other' manufacturing:

  - The total value of fish products manufactured in the Province rose by nearly 10 percent to $790 million.

  - The volume of newsprint shipped increased by 8.4 percent while the value of shipments increased by 18.7 percent.

  - Other types of manufactured products benefited from strong domestic demand and increased consumer spending, along with strong international markets.

- Although total housing starts declined by about 7 percent, investment expenditures in both residential and non-residential construction increased.

- Total investment grew by about 3.3 percent as increased construction expenditures offset a decline in spending on machinery and equipment.

- The electric power industry was stable as total Provincial load increased by 0.3 percent.

- Oil and gas exploration activities continue to be constrained by low world oil prices.

- The service producing industries benefited from the strong performance in the goods producing sector and increased consumer spending.

II. SUMMARY OF ECONOMIC OUTLOOK FOR 1988

International and Canadian:

- Real economic growth in the major industrialized countries is expected to slow somewhat from the pace recorded in 1987; the United States economy is expected to grow by 2.0 percent while the Canadian economy is expected to post real growth of 2.8 percent.

- Inflation and interest rates are expected to be stable or slightly lower in Canada.

- The level of employment should continue to grow in Canada as the country experiences a sixth consecutive year of economic expansion.

Newfoundland and Labrador:

- The Provincial economy will continue to experience real growth as the international economy remains strong; real GDP is expected to increase by about 2.2 percent.

- Inflation is expected to remain low, with the Consumer Price Index advancing by just 3.2 percent, compared to 4.1 percent in Canada as a whole.

- Personal income is expected to grow by 4.5 percent due to continued economic growth and further gains in employment. Combined with lower income tax rates under Stage 1 of tax reform, increased personal income will serve to boost consumer spending. The value of retail trade is expected to grow by 6.0 percent.

- The agriculture industry is expected to post strong growth as Newfoundland Enviroponics Limited achieves its targeted production levels.

- The outlook is positive for the mining industry; several mines will achieve full production and an improvement is expected in the iron ore industry.

- The primary fishing industry is expected to benefit from an increased total allowable catch of Northern Cod.

- The outlook for the manufacturing industry is promising:

  - The fish processing industry should benefit from increased landings. The capelin market is expected to be better than last year.

  - The pulp and paper industry should benefit from continued strong international newsprint demand and anticipated price increases later in the year.

  - The non-resource manufacturing industries will be supported by continued strong domestic demand in the economy and near capacity levels of output in the shipbuilding and petroleum products industries. Performance will vary by type of product.

- Residential and non-residential construction activity is expected to increase.

- Total housing starts will increase by 4.4 percent to about 2,800.

- Total investment is forecast to grow by 4.6 percent.

- Strong growth in the electric power industry is anticipated; total Provincial load is expected to increase by 7.0 percent, mainly because of increased industrial demand.

- The level of activity in the transportation industry is expected to increase due to increased levels of activity in other industries.

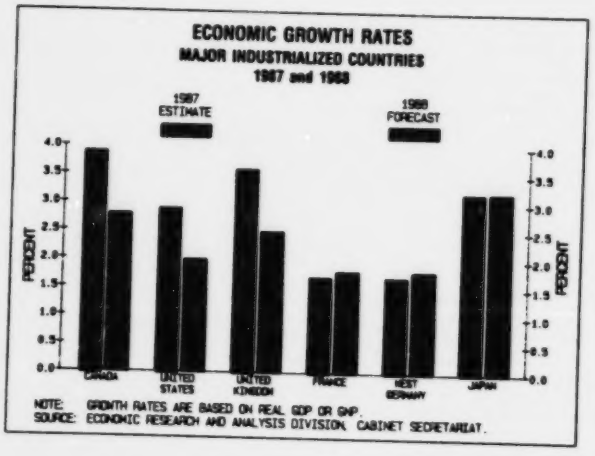
- Oil and gas exploration expenditures will continue to be constrained by low world oil prices, but the oil and gas industry would receive a boost from a positive decision to develop the Terra Nova or Hibernia oil fields.

- The service sector will be stimulated by growth in the goods producing industries and gains in personal income.

III. INTERNATIONAL AND CANADIAN ECONOMIC ENVIRONMENTS

Conditions in the international and Canadian economic environments have a significant bearing on the economic performance of Newfoundland and Labrador. In a highly integrated world economy, developments in both financial and product markets outside of the Province can have a direct impact on the Provincial economy through such factors as the demand for fish products and newsprint as well as interest rates and exchange rates.

Diagram III.1



All of the major industrialized countries continued to experience real economic growth in 1987. As illustrated in Diagram III.1, Canada recorded the highest economic growth rate. Interest rates in these countries were, on average, slightly lower than in 1986 while the rate of inflation was somewhat higher. Economic growth is expected to slow in 1988 but a recession is unlikely to develop. This is good news for Newfoundland and Labrador since economic growth in the Province's export markets is a key factor in maintaining or expanding demand for the Province's exports.

In the United States, the Province's main export market, real Gross National Product (GNP) increased by about 2.9 percent in 1987. Increased employment caused the unemployment rate to fall from an average of 7.0 percent in 1986 to 6.2 percent in 1987. Over the course of 1987, the United States dollar continued to depreciate on world currency markets while inflation and interest rates edged higher.

Consumer spending in the United States grew in real terms at a rate of 1.8 percent in 1987, much slower than the pace recorded in recent years. New car sales declined by 11.2 percent from the high level in 1986. Residential investment (spending on new residential structures by consumers and businesses) declined marginally in real terms as housing starts fell by 9.8 percent due to both rising mortgage interest rates and an excess supply of rental properties. The real value of government spending increased by 2.5 percent amid concerns over the large budget deficits that the federal government continued to incur.

Strong growth in both export volumes and business investment in machinery and equipment was responsible for much of the growth in United States GNP in 1987. The real value of exports increased by 12.8 percent in 1987 as products made in the United States became more competitive in world markets due to the depreciation of the United States dollar against the currencies of other major industrialized countries, especially Japan and West Germany. As the depreciation also made imports more expensive in terms of United States dollars, the growth of import volumes slowed considerably in 1987. This caused a decline in the real value of the trade deficit from US$145.8 billion in 1986 to US$134.3 billion in 1987. Because of the improved competitive position of export industries as well as import competing industries, manufacturers stepped up their capital equipment spending in 1987; business spending on machinery and equipment increased by 3.6 percent in real terms.

Although there was some improvement in the United States trade deficit in 1987, the trade deficit nevertheless became a greater cause for concern to both governments and financial markets worldwide. Two years earlier in 1985, the group of five (G-5) major industrialized countries agreed

to engineer a gradual depreciation of the United States dollar on world currency markets in an effort to reduce the then sizeable United States trade deficit. The United States dollar depreciated significantly, however, the depreciation did not produce sufficient results as quickly as had been expected. It was not until the fourth quarter of 1986 that the real trade deficit in total goods and services began a downward trend as trade volumes improved. The merchandise trade deficit, however, continued to increase until late in 1987, reaching a record $17.6 billion in October. Also, higher import prices resulting from the currency depreciation as well as higher energy prices were key factors contributing to increased inflation in the United States. Inflation as measured by the Consumer Price Index rose from 1.9 percent in 1986 to 3.7 percent in 1987.

Amid concerns over the slow improvement in the trade deficit, the United States dollar continued to depreciate against the currencies of other major industrialized countries during 1987. In response, monetary policy was tightened and interest rates were pushed higher in an effort to support the dollar and reduce inflationary pressures. The prime rate charged by banks in the United States increased from 7.50 percent at the beginning of 1987 to 9.25 percent just before the stock market crash (see Box III.1). Monetary policy was eased after the crash and the prime rate ended the year at 8.75 percent.

In 1988, real GNP growth in the United States is expected to slow to 2.0 percent from 2.9 percent in 1987. This slowdown is mainly attributable to anticipated lower growth in consumer spending and a second consecutive year of declining residential investment spending. Lower growth in these spending categories, however, should be offset by stronger growth in exports resulting from the lagged impact of the United States dollar's depreciation. This will be accompanied by a further decline in the real trade deficit. Business investment spending is also expected to post strong growth in 1988.

The United States dollar is expected to depreciate further in 1988, however, the depreciation is not likely to be substantial in light of the apparent turnaround in the trade deficit which is now underway. The rate of inflation in the United States is expected to rise to 4.0 percent, however, interest rates should remain fairly stable.

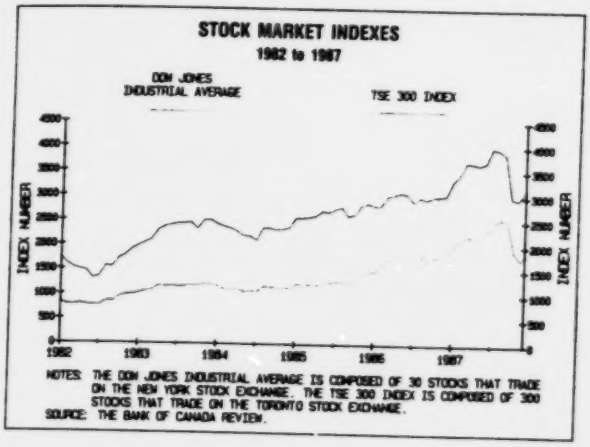
One country's imports are another country's exports. The slowing of United States import growth in 1987 meant a slowing of export growth for major overseas economies which had experienced substantial currency appreciation against the United States dollar. This increased the importance of domestic demand to the economic growth of these countries.

Japan, the Province's second most important export market, was quite successful in its transition from export led growth to domestic led growth. Real GNP increased by about 3.2 percent in 1987. Despite slower export growth, domestic demand was strong, as both monetary and fiscal policies were fairly stimulative. The Japanese discount rate has stood at 2.5 percent since February, 1987. In May of 1987, the Japanese government unveiled a fiscal package involving a substantial increase in public investment spending. Combined with a sharp increase in housing starts, total real investment increased by about seven percent in 1987 and helped fuel a boom in the construction industry. Consumer spending was also strong, increasing by about 3.5 percent in real terms. The strength of domestic demand in Japan contributed to strong growth in imports and provided increased export opportunities for countries, such as Canada, whose currencies have depreciated substantially against the Japanese yen.

In 1988, Japan is again expected to experience strong economic growth, with real GNP increasing by 3.2 percent. Consumer spending and investment will continue to be the engines of growth while import growth is likely to exceed export growth given the strength of the yen in world currency markets. Inflation is expected to remain below one percent while the unemployment rate will remain stable at about three percent.

III.1 THE STOCK MARKET CRASH AND ITS ECONOMIC CONSEQUENCES

One of the most significant economic events of 1987 was the global crash in share prices on October 19, a day which has become known as Black Monday. Around the world, panic selling of shares caused stock market indexes to decline sharply. On Black Monday, the Dow Jones Industrial Average fell 508 points or 22.6 percent to close at 1738 while the TSE 300 Index fell by 407 points or 11.3 percent to close at 3198. For several weeks after Black Monday, stock prices remained highly volatile.


STOCK MARKET INDEXES
1982 to 1987
DOW JONES INDUSTRIAL AVERAGE
TSE 300 INDEX
INDEX NUMBER
INDEX NUMBER
1982
1983
1984
1985
1986
1987
NOTES: THE DOW JONES INDUSTRIAL AVERAGE IS COMPOSED OF 30 STOCKS THAT TRADE ON THE NEW YORK STOCK EXCHANGE. THE TSE 300 INDEX IS COMPOSED OF 300 STOCKS THAT TRADE ON THE TORONTO STOCK EXCHANGE.
SOURCE: THE BANK OF CANADA REVIEW.

The path of both the TSE 300 Index and the Dow Jones Industrial Average since 1982 is illustrated in the diagram. It is generally agreed that the most recent bull market (that is, a stock market in which prices are trending higher over time) began in the summer of 1982 and ended when prices peaked in August of 1987. During that period, both of these stock market indexes more than doubled in value. Despite the impact of the crash, stock market indexes were generally higher at the end of 1987 than they were at the beginning of 1987. Viewed in this perspective, the crash does not seem nearly as devastating as it would have been had the stock market fallen from a level which had been sustained for a long time.

It is not entirely clear why the crash occurred. Nevertheless, many reasons have been advanced including the size of the United States trade deficit, fear of continued large declines in the United States dollar, rising inflation and interest rates in several of the major industrialized countries, a computerized arbitrage technique known as program trading, and some worrisome remarks made by the United States Treasury Secretary on the weekend prior to the crash. Also, some market analysts have suggested that the stock market was overvalued prior to the crash. In other words, a 'speculative bubble' had been created as investors sought capital gains by buying stocks. As stock prices rose, expectations of further capital gains were created. Thus, investors demand for stocks increased, pushing stock prices even higher and triggering additional rounds of buying speculation. Finally the speculative bubble 'burst' and stock prices plummeted, returning prices to levels more reflective of their underlying value.

The economic implications of the crash in stock prices are difficult to assess. A sharp decrease in stock prices is generally regarded as a leading indicator, or early warning sign, of an economic downturn or recession. The underlying value of a stock is derived from the future stream of dividends that it will pay. Since these dividends, in turn, depend upon company profits which largely depend on many economic factors including economic growth, a general decline in the stock market may be related to an expected decline in economic activity. The stock market crash which occurred in October, 1929 and was followed by the Great Depression of the 1930s is probably the most frequently cited example of a crash preceding an economic downturn. The crash of 1987 has aroused concerns that a similar course of events is imminent. However, recessions do not always follow sharp declines in the stock market and not all recessions are preceded by such declines.

Apart from its role as a leading indicator of economic downturns, a stock market crash can itself produce negative economic impacts because of its influence on expectations and wealth. It can do this through an erosion of business and consumer confidence leading to reduced growth rates in investment and consumer spending. Also, a decline in stock prices implies a reduction in the market value of wealth. This may induce people to spend less and save more in order to make up for their lost wealth, thus reducing spending and hence economic activity. It is estimated that a one point decline in the TSE 300 Index results in a wealth loss of about $90 million on the part of the households and businesses which own the shares of the 300 companies comprising the index.

The economic impact of the 1987 crash, however, is generally believed to be fairly small. It has been estimated that the crash will reduce the rate of real economic growth in the G-7 countries by about one-half of one percent in 1988. Several factors, however, have since mitigated the impact of the stock market crash including the reduction in interest rates following the crash and the fact that stock markets have since recovered some of their losses. When these factors are taken into account, the total economic impact of the crash and subsequent developments is likely to be a reduction in real economic growth of less than one-half of one percent in 1988.

In the key economies of Western Europe, economic performance was mixed. The United Kingdom posted strong growth in 1987 as real GDP grew by 3.6 percent while France and West Germany posted slower growth of about 1.7 percent. The absence of stronger growth in France and West Germany is partly due to stagnant export growth due to the appreciation of the franc and mark against the United States dollar. In 1988, economic growth may slow somewhat in the United Kingdom, but France and West Germany are expected to maintain economic growth at about the same rate as last year. Unemployment is expected to remain high in Western Europe, averaging about ten percent.

The Canadian economy grew by an estimated 3.9 percent in real terms in 1987. This marked the second consecutive year that Canada's growth rate exceeded that of any other major industrialized country. The strength of output growth stemmed mainly from consumer and investment spending. Consumer spending grew by 4.5 percent in real terms supported by very high levels of consumer confidence and a decline in the personal savings rate. The personal savings rate, or the percentage of personal disposable income which is not spent on goods and services, dropped from 11.5 percent in 1986 to 8.9 percent in 1987, its lowest level since 1972. Growth in real personal disposable income also contributed to increased consumer spending in 1987.

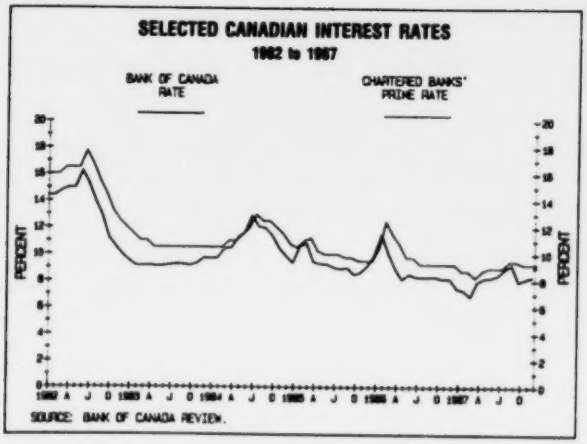
Total investment grew at an even faster pace than consumer spending in 1987, increasing by 9.8 percent in real terms. Investment in residential structures grew by 14.9 percent while business investment in machinery and equipment grew by 14.8 percent. Residential investment reflected the strength of housing starts which increased by 23.1 percent to about 246,000 units in 1987 because of low mortgage interest rates, high levels of consumer confidence and interprovincial migration into Ontario where housing starts were exceptionally high. Increased expenditures on machinery and equipment occurred as businesses generally remained confident about sales prospects and corporate balance sheets improved with increased profits. Real investment in non-residential structures, however, remained at about the same level as in 1986.

Total government spending on goods and services grew by about 2.4 percent in real terms in 1987. Efforts by governments in Canada to reduce their budget deficits are, in large part, responsible for the low growth rate in government spending relative to GDP. The federal government reduced its budgetary deficit slightly in the 1987/88 fiscal year to $29.3 billion compared with $30.6 billion in 1986/87.

Canada's real net exports of goods and services declined by 18.1 percent in 1987 as the growth of imports outpaced the growth of exports. Exports grew by 5.6 percent while imports posted a sharper rise of 9.0 percent. Export growth reflected strong domestic demand in both the United States and Japan. Much of the growth was concentrated in resource based products while exports of autos and parts declined, partly due to lower new car sales in the United States. The growth in imports resulted mainly from a sharp increase in machinery and equipment imports as Canadian businesses increased their capital investment. While Canada's trade surplus worsened on a volume basis in 1987, the current dollar value of the merchandise trade surplus remained fairly constant at about $10.4 billion. This occurred because of an improvement in Canada's terms of trade (the price of its exports relative to its imports) in 1987. Overall, export prices fell, despite higher commodity prices, but import prices declined by a greater amount thus resulting in an improvement in the terms of trade.

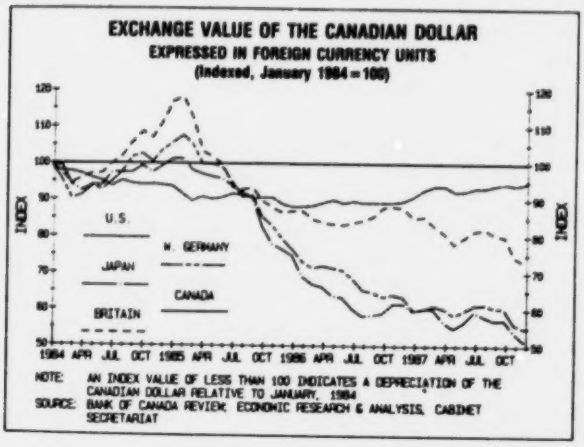
Canada's rate of inflation, as measured by the Consumer Price Index, averaged 4.4 percent in 1987 compared to 4.1 percent in the previous year. The inflation rate increased from 3.9 percent in January to a peak of 4.8 percent in June; the inflation rate finished the year at 4.2 percent in December. On several occasions in 1987, the Governor of the Bank of Canada emphasized that Canadian monetary policy remains firmly committed to achieving price stability which implies a near zero rate of inflation. The Bank reiterated its view that price stability is most conducive to long term economic growth.

Diagram III.2



The Bank of Canada generally pursued a less accommodative monetary policy in 1987 because of rising interest rates in the United States and concerns over increasing inflation rates in Canada. The Bank Rate (as illustrated in Diagram III.2) increased from 7.14 percent at the end of March to 9.57 percent at the end of September. Due to the fears that persisted in financial markets in the wake of the stock market crash (see Box III.1), the Bank of Canada Rate was lowered quickly and ended the year at 8.66 percent. Other interest rates, such as the Chartered Bank's Prime Rate, generally reflected trends similar to the Bank Rate.

Diagram III.3

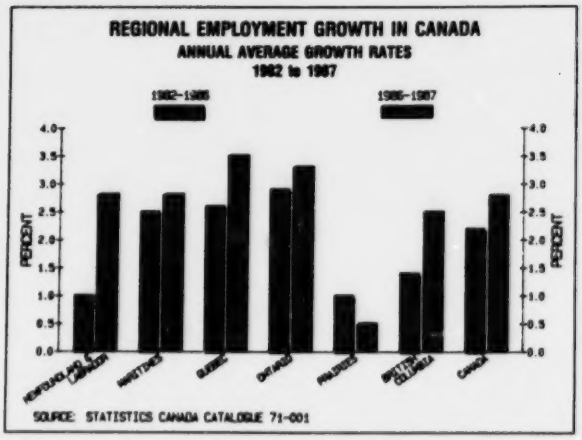

EXCHANGE VALUE OF THE CANADIAN DOLLAR
EXPRESSED IN FOREIGN CURRENCY UNITS
(Indexed, January 1984 = 100)
INDEX
U.S.
W. GERMANY
JAPAN
CANADA
BRITAIN
NOTE: AN INDEX VALUE OF LESS THAN 100 INDICATES A DEPRECIATION OF THE CANADIAN DOLLAR RELATIVE TO JANUARY, 1984
SOURCE: BANK OF CANADA REVIEW; ECONOMIC RESEARCH & ANALYSIS, CABINET SECRETARIAT

The Canadian dollar has fluctuated considerably over the past few years on world currency markets as illustrated in Diagram III.3. During 1987, the Canadian dollar depreciated in value against major overseas currencies such as the United Kingdom pound, West German mark and the Japanese yen, however, the dollar appreciated in value against the United States dollar. The United States dollar averaged Cdn$1.3260 in 1987, representing a 5.5 percent appreciation of the Canadian dollar compared to 1986. The strength of the Canadian dollar reflected both the weaker American dollar due to their high trade deficit and higher interest rates in Canada than in the United States. This interest rate differential attracted foreign capital into Canadian dollar denominated bonds and thus increased the demand for Canadian dollars.

Increased economic activity in Canada resulted in strong employment growth and a lower unemployment rate in 1987. The annual average level of employment grew by 2.8 percent in 1987 and this caused the rate of unemployment to fall to 8.9 percent from 9.6 percent in 1986. This was the lowest unemployment rate since 1981. Also, the participation rate and the employment/population ratio (the number of people employed relative to the population of labour force age) reached their highest levels ever, averaging 66.2 percent and 60.3 percent, respectively, in 1987. The total number of people employed grew by 321,000 to 11,955,000.

While the annual average unemployment rate declined in all ten provinces in 1987, there was little improvement in regional economic disparity. Southern Ontario enjoyed a booming economy in 1987 and many firms actually experienced difficulty filling job vacancies because of tight labour supplies. This was especially true in Toronto where the unemployment rate averaged only 4.5 percent. As in 1986, Ontario had the lowest unemployment rate at 6.1 percent while only two other provinces, Manitoba and Saskatchewan, had unemployment rates below the national average of 8.9 percent.

Diagram III.4



Employment growth between 1982 and 1986 was concentrated in Ontario and Quebec, as illustrated in Diagram III.4. The Maritime provinces also experienced above average employment gains while employment growth in the western provinces and Newfoundland and Labrador lagged behind the national average. In 1987, employment growth continued to be concentrated in central Canada and the Maritime provinces although in Newfoundland and Labrador, employment growth increased to the national average level. In the Prairie provinces, employment grew by only 0.5 percent in 1987. This reflected low levels of activity in the oil exploration and development industry due to low world oil prices as well as weakness in the agricultural industry due to low grain prices.

In 1988, real economic growth in the Canadian economy is expected to slow to 2.8 percent compared to 3.9 percent in 1987. This slowdown is primarily due to lower anticipated growth in consumer spending and a decline in residential investment. Real growth in consumer spending is expected to be about 2.5 percent in 1988. Since the personal savings rate is already quite low and unlikely to fall much further, growth in consumer spending will depend mainly on increased personal disposable income. The implementation of Stage 1 of the Federal Government's tax reform program in 1988, by reducing income taxes, will be a key factor contributing to growth in personal disposable income.

Residential investment spending is expected to decrease by as much as 12 percent in 1988. This is mainly because the pace of housing starts in the last few years has been sufficient to satisfy most of the pent-up demand for housing that developed in the period of high mortgage interest rates during and after the recession of 1981/82. With housing starts reaching an unsustainably high level in 1987, starts are expected to fall by about 25 percent in 1988.

Business investment in non-residential construction and machinery and equipment is expected to post strong growth in 1988 given current high rates of capacity utilization in many industries. Healthy profit levels and strong balance sheets will also encourage business investment.

Real government spending on goods and services in Canada is expected to grow at a somewhat slower pace than real GDP in 1988. The federal government has budgeted for a 4.3 percent increase in its program spending in the 1988/89 fiscal year while public debt charges will grow by 9.9 percent. The budget deficit will decline only marginally to $28.9 billion.

Both exports and imports of goods and services are expected to post moderate growth in 1988 leaving the real value of the trade surplus about the same as in 1987. The depreciation of the Canadian dollar against major overseas currencies will likely mean real growth in exports to overseas markets such as Japan, however, the appreciation of the Canadian dollar against the United States dollar could be a negative factor for export sales to the United States. The effect of the appreciation will be offset to some extent by the fact that currencies of overseas economies have appreciated against the United States dollar much more than the Canadian dollar has. Hence, Canadian exporters have still gained an edge against other foreign competitors in the American market despite the appreciation of the Canadian dollar.

Growth in Canadian import volumes in 1988 will stem from increased domestic demand, especially for machinery and equipment which tends to have a high import component. Also, the appreciation of the Canadian dollar against the United States dollar has made imports from the United States cheaper and this is expected to boost the volume of imports from the United States.

The dollar's appreciation, by reducing the price of imports, will also help to contain inflation in Canada this year. The rate of inflation, as measured by the Consumer Price Index, is expected to average about 4.1 percent in 1988, a decrease of 0.3 percentage points compared with 1987.

The outlook for Canadian interest rates in 1988 is favourable, given the recent strength of the Canadian dollar in currency markets and the expected decline in the inflation rate. Interest rates are not likely to increase and they may in fact decline over the course of 1988. Should economic growth be much slower than anticipated, a larger decrease in interest rates could be forthcoming, as the Bank of Canada would be inclined to ease monetary policy.

Employment growth in Canada is expected to be 2.8 percent in 1988 on an annual average basis. With growth in employment outpacing growth in the labour force, the unemployment rate is expected to average 8.3 percent in 1988, down 0.6 percentage points from 1987.

IV. AN OVERVIEW OF THE NEWFOUNDLAND AND LABRADOR ECONOMY

The Newfoundland and Labrador economy may be best described as a primary resource based economy. Today, as in the past, the harvesting of fish and timber along with the extraction of minerals comprise the cornerstone of the Province's economy.

The output of the goods producing sector accounted for 36.2 percent of total Gross Domestic Product in the Province during 1986. Table IV.1 outlines the composition of the goods producing sector and the distribution of Gross Domestic Product (GDP) attributed to the Province's goods industries in 1986.

Table IV.1

THE NEWFOUNDLAND AND LABRADOR GOODS PRODUCING SECTOR GROSS DOMESTIC PRODUCT BY INDUSTRY AT FACTOR COST: 1986

	Current $ 1986 (millions)	Percent of Total
Primary:		
Agriculture	22.0	1.0
Forestry	50.0	2.3
Fishing and Trapping	125.0	5.8
Mining, Quarries and Oil Wells	425.0	19.7
Total Primary	622.0	28.8
Manufacturing:		
Fish Products	285.0	13.2
Pulp and Paper Products	120.0	5.5
Other Manufactured Products	200.0	9.3
Total Manufacturing:	605.0	28.0
Construction	560.0	25.9
Electric Power & Water Utilities	373.5	17.3
TOTAL GOODS PRODUCING SECTOR	2,160.5	100.0

Source: Newfoundland Statistics Agency and Economic Research and Analysis Division, Cabinet Secretariat.

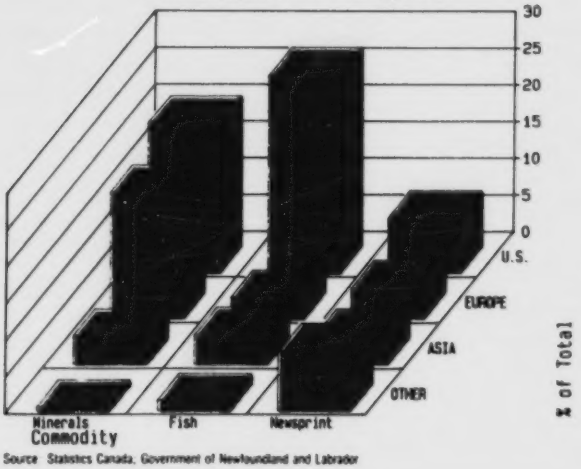
As illustrated in Table IV.1, the harvesting and processing of fish and timber along with the extraction of minerals gives rise to over 46 percent of the output of the goods producing sector. The linkages between the Province's natural resources and the manufacturing industry are also demonstrated in this table. The processing of fish and the production of newsprint accounted for about two-thirds of total manufacturing GDP in 1986.

The Newfoundland and Labrador economy is linked to the economies of other countries as a result of its natural resource based exports. Historically, of the total value of goods shipped outside the Province, mineral products (mainly iron ore), fish and newsprint account for the highest

proportion. The total trade flows of these products from the Province in 1986 to non-Canadian markets are illustrated in Map IV.1. While the relative importance of the markets highlighted in the map varies from year to year, the United States has been our most important customer for many years followed by Europe and Asia. Diagram IV.1 highlights these important export markets in 1986, and illustrates the proportion of total exports for selected commodities shipped by destination. For example, about 41 percent of total exports in 1986 was mineral products whereas mineral products shipped to Asia accounted for about 4 percent of total exports. In the same year, nearly 55 percent of total exports of these three commodity groups was shipped to markets in the United States. The most important export to the United States was fish products at about 27 percent of total exports followed by mineral products at about 20 percent of total exports. Other products exported to the United States (about 7 to 8 percent of total exports in 1986) included newsprint and other products which are not included in the diagram. The United States, Asia and Europe were important markets for iron ore, fish and newsprint in 1986. Although most exports to Asia in 1986 were destined to Japan, exports to other Asian markets included shipments of newsprint to China and shipments of non-metallic minerals to India. The ties between the economy of Newfoundland and Labrador and foreign economies through our exports has caused the economic performance of the Province to rise and fall in unison with that of foreign economies.

Diagram IV.1

MAJOR EXPORT MARKETS OF NEWFOUNDLAND and LABRADOR BY COMMODITY and VALUE, 1986



Source: Statistics Canada, Government of Newfoundland and Labrador

Approximately 54 percent of the output of the goods producing sector is accounted for by the agriculture, construction, and electric power and water utilities industries as well as the non-resource manufacturing component of the manufacturing industry. The output of these industries is primarily for consumption within the Province. The construction industry meets the housing and capital infrastructure requirements of the economy. The electric power and water utilities provide electricity and water supplies. Goods such as beverages, food stuffs, ship building and concrete are provided by the non-resource manufacturing industries. Agriculture is not large in Newfoundland and Labrador but the food it produces is largely for consumption within the Province.

In 1986, the proportion of GDP accounted for by the service sector averaged approximately 62.2 percent for the 10 Canadian provinces, according to the Conference Board of Canada. The proportion varied across provinces, from a low of 53.9 percent in Alberta to a high of 69.5 percent in Nova Scotia. In Newfoundland and Labrador, the proportion of GDP in the service sector fell about midway between the lowest and the highest.

The distribution of employment within the service sector of the Province and of Canada is also similar, as illustrated in the table below.

An examination of the industries which comprise the service sector and some examples of the services and products provided by the firms within these industries are useful in understanding this essential component of the economy.

Table IV.3 reveals that the types of services offered by the Transportation, Communication and Other Utilities industry include transportation by air, road, water and rail. This industry is dominated by the transportation component and in 1987 it was estimated that approximately 16,000 persons were employed in this industry on an annual average basis. The size of the workforce in

this industry is not surprising given the number of workers required to handle the large volume of goods that move to, from and within the Province by truck, rail and ship. In addition, many workers are required to facilitate the movement of people by air and land transport in a modern economy.

Table IV.2

DISTRIBUTION OF EMPLOYMENT BY SERVICE SECTOR INDUSTRY IN 1986

	Canada Percent of Total	Newfoundland & Labrador Percent of Total
Transportation, Communication & Other Utilities	10.9	12.4
Wholesale & Retail Trade	25.3	24.8
Finance, Insurance & Real Estate	8.0	3.9
Community, Business & Personal Services	46.0	43.4
Public Administration	9.7	15.5

Source: Statistics Canada Catalogue No. 71-001.

The Wholesale and Retail Trade industry is the second largest component of the service sector in terms of employment. Firms within this industry provide consumer goods, food, clothing and many other products essential in Newfoundland and Labrador.

The performance of both the Transportation, Communication and Other Utilities industry and the Wholesale and Retail Trade industry are closely related to the level of economic activity in the goods producing sector. For example, an increase in fish landings will cause an increase in the number of persons required to process and ship the product. Furthermore, additional supplies will be required by fishermen, processors and transport companies to support the increased level of activity. This increased demand for services by the goods sector, along with the additional income generated in both sectors, will stimulate an increase in the output of the Transportation, Communication and Other Utilites and the Wholesale and Retail Trade industries. These elements of the service sector tend to move in harmony with the goods producing sector.

Examples of the types of services provided by the Community, Business and Personal Services and Public Administration industries are also provided in Table IV.3. Increases in the output of these industries are less directly related to the performance of the goods producing sector. For example, the number of teachers and doctors employed by institutions within the Community, Business and Personal Service industry, or the number of police officers employed by agencies within Public Administration will not vary substantially from one year to the next since these services are required on an ongoing basis and are primarily related to demographic and social factors.

Table IV.3

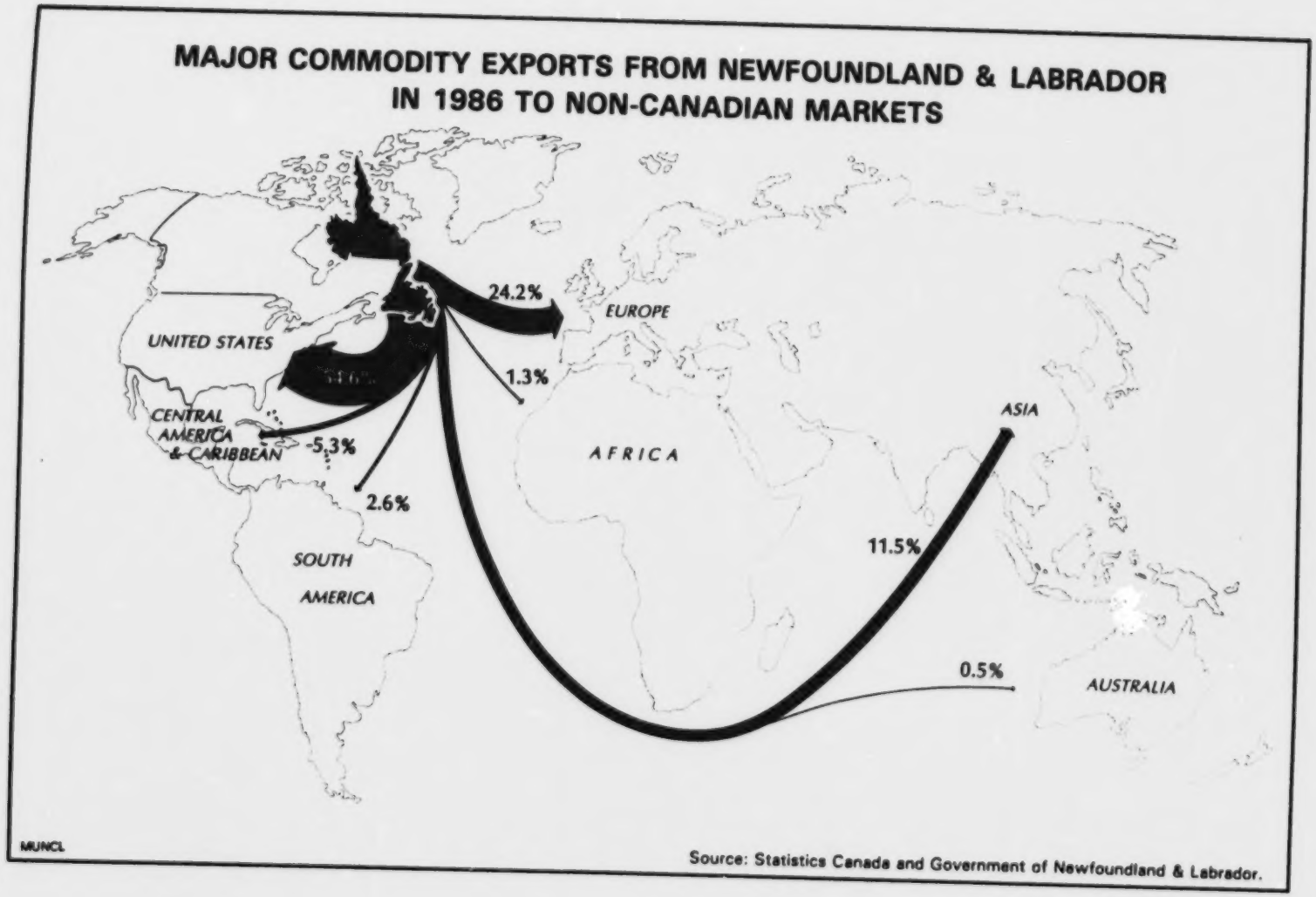
SERVICE SECTOR INDUSTRIES AND THE SERVICES AND PRODUCTS PRODUCED

Industry Division	Illustrative Types of Services	1987 Annual Average Employment
Transportation, Communication & Other Utilities	Air, Railway, Road and Water Transportation, Broadcasting, Telephone, Electric Power	16,000
Wholesale & Retail Trade	Selling of Consumer Goods, Products, Food, Clothing, Appliances, Building Supplies, Automobiles, etc.	35,000
Finance, Insurance & Real Estate	Banking, Insurance & Real Estate Services	5,000
Community, Business & Personal Services	Lawyers, Accountants, Teachers, Doctors, Nurses, Social Workers, Hospital Workers	58,000
Public Administration	Municipal, Provincial and Federal Levels of Government	18,000

Source: Standard Industrial Classification (1980) and Statistics Canada, Catalogue 71-001.

This overview of the structure of the Newfoundland and Labrador economy provides a context within which changes in performance from year to year can be assessed. An understanding of the current structure of the Provincial economy provides a useful framework for reviewing the performance of the economy in 1987 and the outlook for 1988.

MAP IV.1


MAJOR COMMODITY EXPORTS FROM NEWFOUNDLAND & LABRADOR
IN 1986 TO NON-CANADIAN MARKETS
24.2%
EUROPE
UNITED STATES
1.3%
CENTRAL
AMERICA
& CARIBBEAN
5.3%
AFRICA
ASIA
2.6%
11.5%
SOUTH
AMERICA
0.5%
AUSTRALIA
MUNCL
Source: Statistics Canada and Government of Newfoundland & Labrador.

V.0 PRIMARY AGRICULTURE

The agriculture industry consists of farming operations producing crops, livestock and livestock products. The commercial harvesting of wild berries is also regarded as an important component of this industry. The industry employs about 1,000 people on an annual average basis and accounts for 1.0 percent of GDP in the goods producing industries and 0.4 percent of total GDP. Given the highly seasonal nature of the agriculture industry in the Province, the number of jobs in the industry is much greater than 1,000. Also, the agriculture industry supports a large number of jobs through its linkage to the Province's food and beverage manufacturing industry (discussed in Section V.4.3 of this report). While the agriculture industry is not large, it nevertheless makes a significant contribution to the rural economy while reducing the Province's dependence on imported foods. The output of this industry is mainly for domestic consumption, however, some agricultural products, such as blueberries and furs sold from ranches, are exported to markets outside the Province.

There were a total of 651 farms in the Province in 1986 according to the Census of Agriculture. The majority of the farms are owned by individuals or families and are small in terms of both size and revenues. As indicated in Table V.0.1, of the total number of farms, 236 reported sales of less than $2,500 while 110 reported sales in excess of $100,000. About one-half of all farms employed paid labour in 1986 amounting to 22,836 weeks of employment; about one-half was year-round and the remainder was seasonal. The seasonal nature of some types of farming operations is also reflected in the fact that 284 farm operators had worked in non-agricultural employment in the previous year.

Table V.0.1

NUMBER OF FARMS CLASSIFIED BY SALES CLASS, NEWFOUNDLAND AND LABRADOR 1981 AND 1986

Total Value of Agricultural Products Sold ($)	Number of Farms: 1981	Percent of Total	Number of Farms: 1986	Percent of Total
500,000 and over	6	0.9	27	4.2
250,000 to 499,999	25	3.7	25	3.8
100,000 to 249,999	47	6.9	58	8.9
50,000 to 99,999	35	5.2	43	6.6
25,000 to 49,999	35	5.2	41	6.3
10,000 to 24,999	68	10.0	77	11.8
5,000 to 9,999	64	9.4	67	10.3
2,500 to 4,999	104	15.3	77	11.8
Under 2,500	295	43.4	236	36.3
All Sales Classes	679	100.0	651	100.0

Source: Statistics Canada, Census of Agriculture, Catalogue 96-103.

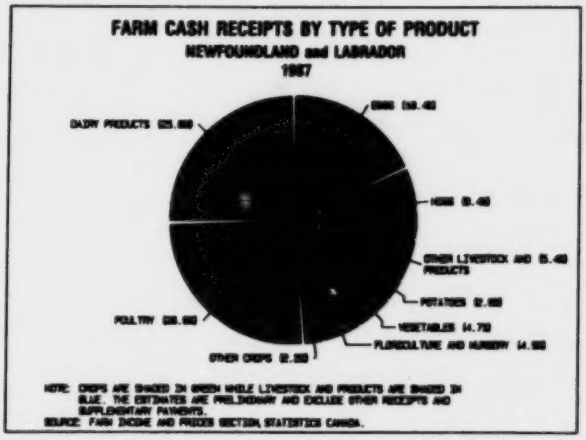
The number of farms in the Province has decreased over time following trends in the agriculture industry throughout the world. Between 1971 and 1986, the number of farms has decreased from 1,042 to 651, an annual average rate of decline of 3.1 percent over the period. The size of farms in terms of acreage, however, has increased considerably from an average of 60.2 acres in

1971 to 138.8 in 1986. There are also more large farms in terms of revenues. The number of farms with revenues in excess of $500,000 grew from six in 1981 to twenty-seven in 1986.

In order to support the efforts of agricultural producers, five Provincial Commodity Marketing Boards have been established in Newfoundland and Labrador. Each of these five Boards has the power and authority under legislation to regulate the production and marketing of one of chicken, eggs, hogs, milk and vegetables.

The two marketing boards responsible for eggs and milk, respectively, set quotas and prices for these agricultural products at the producers level in an effort to ensure stable revenues for farmers. The administered agricultural prices are based on the average cost of production for all producers of the commmodity in the Province. Average cost pricing ensures that each producer has an incentive to be as cost efficient as possible. A producer who succeeds in keeping his average cost below the average cost of other producers will enjoy a higher profit margin and hence higher net income. This incentive encourages all producers to keep their average costs, and hence the farmgate price, as low as possible in order to maximize their net income.

Diagram V.0.1



The relative importance of the various types of agricultural products to the cash receipts of farmers in the Province is illustrated in Diagram V.0.1 which is based on Table V.0.2. The diagram reveals that the production of livestock and livestock products account for a much larger proportion of revenues than crop production. In 1987, about 85 percent of total cash receipts was generated by livestock and livestock products. The most important agricultural commodities in terms of farm cash receipts are poultry, dairy products, eggs and hogs. Eggs and poultry together account for more than one-half of livestock and livestock product receipts. There are 36 quota egg producers sharing a Provincial quota of approximately 440,000 layers and 19 broiler producers sharing a total allocation of seven million kilograms. The Province is self-sufficient in egg production. The main product of the dairy industry is milk which is sold to three Provincial dairies. (Dairies are classified as part of the Food and Beverage manufacturing industry and are discussed in Section V.4.3 of this report). In 1987, there were about 73 dairy farms in the Province and their production accounted for about 80 percent of the Province's milk consumption. Hog production is the fourth largest component of the Province's agriculture industry. There are 16 producers of hogs in the Province and together they accounted for about 10 percent of total farm cash receipts in 1987. Hog prices tend to vary substantially over time and this, as opposed to the level of production, is a major source of the fluctuations in the revenue of hog producers.

Farm cash receipts from crop production accounted for about 15 percent of total cash receipts in 1987. Potatoes and other vegetables (mainly turnip and cabbage) accounted for about one-half of total crop receipts while floriculture and nursery products accounted for about one-third. The remainder was derived from small fruits such as strawberries and blueberries and other crops such as savory.

Vegetables, strawberries and non-storable 'specialty crops' including brussel sprouts, broccoli, cauliflower, greens, lettuce and celery are grown and sold fresh in local markets. Savoury and blueberries are produced and sold in both local and export markets. Farm cash receipts understate

Table V.0.2

FARM CASH RECEIPTS, 1986 & 1987
NEWFOUNDLAND & LABRADOR,
(Thousands of Dollars)

Crops Produced	1986	1987	% Change
Potatoes	1,177	1,235	4.9
Fruit	509	714	40.3
Vegetables	2,307	2,231	-3.3
Floriculture & Nursery	2,160	2,310	6.9
Other Crops	304	279	-8.2
Crop Insurance Payments	1	50	N/A
Total Crops	6,458	6,819	5.6
Livestock and Products			
Cattle	1,215	1,285	5.8
Calves	97	101	4.1
Hogs	4,658	4,423	-5.0
Sheep, Lambs and Wool	119	127	6.7
Dairy Products	11,001	12,203	11.0
Poultry	12,638	12,547	-0.7
Eggs	8,620	8,711	1.1
Fur	251	639	154.6
Other Livestock	386	400	3.6
Total Livestock & Products	38,985	40,436	3.7
Other Receipts & Supplementary Payments	450	231	-48.7
TOTAL CASH RECEIPTS	45,893	47,486	3.5

Source: Farm Income and Prices Section, Statistics Canada.

the importance of fruit production in the Province since they account only for the value of cultivated products and exclude the harvest of blueberries and other small fruits which are not grown on farms. In 1987, $2.9 million was paid to blueberry pickers, an amount substantially higher than any of the reported components of crop receipts.

Floriculture and nursery products are produced in greenhouses and other enclosed production facilities such as hydroponic structures. Major products have included bedding plants, potted plants, and vegetable transplants which are sold within the Province.

Total farm cash receipts in 1987 increased by 3.5 percent from the previous year to $47.5 million, as indicated in Table V.0.2. Employment in the industry remained stable at an annual average of about 1,000.

V.0.1 MAJOR HYDROPONICS FACILITY ESTABLISHED

On May 19, 1987, the Government of Newfoundland and Labrador and the Sprung Group of Companies of Calgary, Alberta announced an $18.4 million joint venture arrangement for the construction and operation of a hydroponics greenhouse system for the growing of agricultural products. A formal agreement was signed in June and provided for the formation of a jointly owned company, Newfoundland Enviroponics Limited. Construction of the hydroponics facility began soon after and provided jobs for about 300 construction workers. The project should be fully completed by the end of April, 1988.

Newfoundland Enviroponics Limited was established with a $3.5 million equity contribution by both the Sprung Group of Companies and the Provincial Government. The Province also provided a $7.0 million loan guarantee and a retail sales tax exemption of $0.9 million. The Sprung Group also contributed a $0.5 million loan guarantee while the joint venture company will fund the $3.0 million cost associated with a lease/purchase arrangement for the lighting system.

The hydroponics facility uses soil-less technology in which plants are grown in a solution of water and nutrients which is continuously recirculated, providing each plant with a precise and constant supply of food. With the aid of a special lighting system, high quality fresh produce can be produced year-round in a disease-free environment without the use of pesticides or herbicides. The first planting took place in early December, 1987 and involved the setting of 10,000 lettuce seeds, 5,200 cucumber plants and 4,800 tomato plants. In early February, 1988 the first produce was sold in local markets.

Newfoundland Enviroponics estimates that the facility will produce seven million pounds of saleable product annually when in full production and employ a permanent staff of 150. Full production should be attained by May and the company will be able to supply the market on a continuous basis. In addition to reducing the Province's dependence on imported produce, the facility will also export fresh vegetables to markets outside the Province.

Farm cash receipts from cultivated crop production increased by 5.6 percent to $6.8 million in 1987. The volume of vegetable and potato production declined slightly due to unseasonably dry growing conditions, however, the impact on receipts was offset to some extent by higher prices for potatoes and other vegetables. Higher greenhouse sales contributed to the 6.9 percent increase in floriculture and nursery cash receipts. Higher prices and volumes of cultivated blueberry production were mainly responsible for the 40.3 percent increase in cash receipts from fruit as indicated in Table V.0.2.

There was a bumper harvest of blueberries in 1987. The combined harvest of cultivated and uncultivated blueberries was 2,300 tonnes valued at $2.9 million in contrast to 746 tonnes valued at $610,000 in 1986.

Cash receipts from livestock and livestock products increased by 3.7 percent in 1987 to $40.4 million. Receipts from dairy producers grew by 11.0 percent, mainly because of a higher volume of milk production. Cash receipts from poultry and eggs were about the same as in the previous year as both volume and prices were stable. The five percent decline in hog receipts is attributable to both lower prices and lower levels of production. The fur component of livestock products experienced rapid expansion in 1987 as cash receipts shot up 155 percent due to both increased fox fur prices and production levels. The number of fur farms also increased from 83 in 1986 to over 100 in 1987.

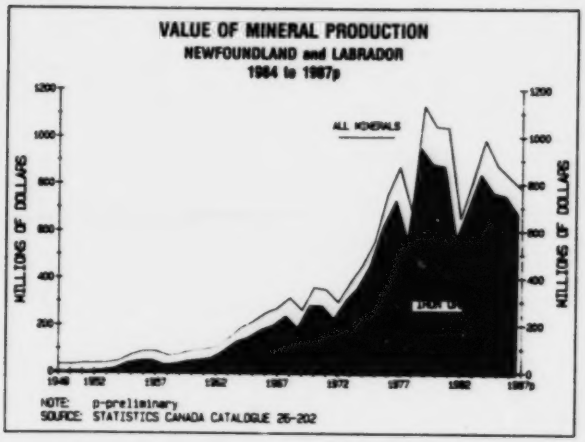
Two major developments in the agriculture industry in 1987 were the addition of a major hydroponics facility (see discussion in Box V.0.1) and the signing of the Canada-Newfoundland Subsidiary Agreement on a Livestock Feed Initiative on March 27, 1987. The agreement commits

$4.8 million of assistance to develop the Newfoundland livestock feed sector over a four year period which commenced in 1987/88. The Federal Government will contribute $4.0 million and the Provincial Government will contribute $0.8 million. The Province's livestock industry has been highly dependent on outside sources of feed grain and protein crops. The agreement, which provides for capital assistance, technology enhancement and industry support services, is designed to increase the quantity and quality of livestock feed produced in the Province; promote and improve the development and production of new or improved feeds and processing and utilization systems; and improve producers' technical and managerial skills related to feed production.

In 1988, farm cash receipts are expected to increase considerably when Newfoundland Enviroponics Limited enters full production. Also if yields from field crops return to more normal levels following the dry growing conditions of 1987, crop production levels should increase. Production of chicken and eggs is expected to remain near 1987 levels. Hog receipts are expected to experience a further decline in 1988 because of lower hog prices due to higher production in the United States. This should, however, be offset by strong growth in the dairy sector as a result of higher milk production and an increase in the farmgate price of milk. The livestock industry should also benefit from stable feed grain prices, as feed costs are the largest single expense of livestock producers.

V.1 MINING

Diagram V.1.1



The mining industry accounted for approximately 20 percent of GDP in the Province's goods producing sector in 1987 and 7.1 percent of total GDP. Employment in the mining industry during 1987 averaged about 3,900 workers. The most important minerals produced by the Province's mining industry during 1987 are listed in Table V.1.1 while Map V.1.1 illustrates the locations of the various mines throughout the Province. The total value of mineral production in the Province was almost $768 million in 1987 with iron ore production accounting for more than 89 percent of the total. Employment in the iron ore industry accounted for about 53 percent of total mining employment. The importance of the iron ore industry to the value of mineral production in the Province is illustrated in Diagram V.1.1. The diagram also illustrates how its importance has changed over time, particularly since the early 1970s.

Table V.1.1

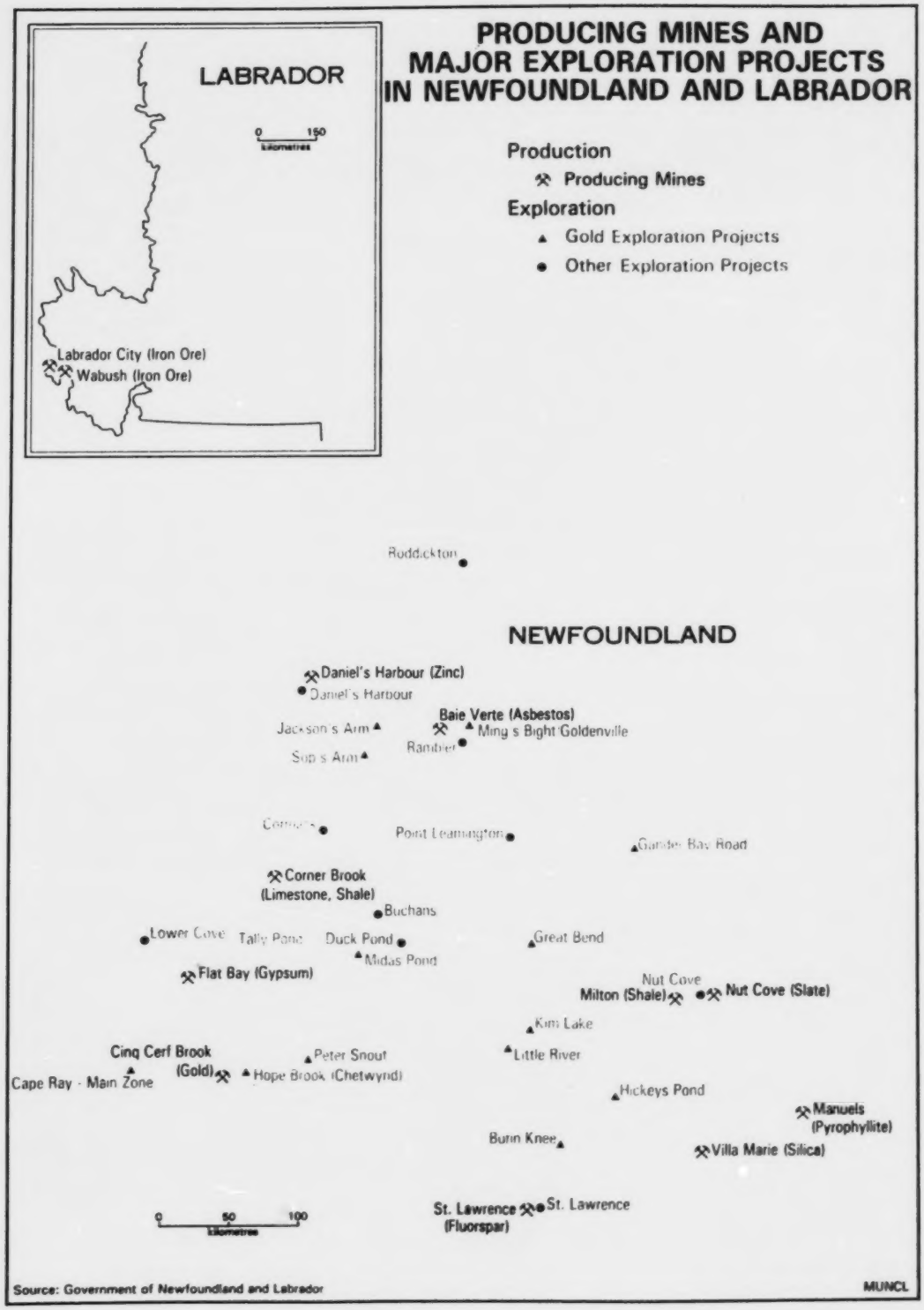
VALUE OF MINERAL PRODUCTION IN NEWFOUNDLAND AND LABRADOR DURING 1987 (millions)

Mineral	Mine Location	Value of Production
1. Iron Ore	Labrador City, Wabush	685.4
2. Structural materials	Various locations	26.7
3. Asbestos	Baie Verte	21.0
4. Zinc	Daniel's Harbour	17.0
5. Gold	Cinq Cerf	7.8
6. Gypsum	Flat Bay	4.7
7. Pyrophyllite	Manuels	1.7
8. Silica	Dunville	1.2
9. Other		2.3
TOTAL Value of Production		$767.8

Note: Data is preliminary. Structural materials include cement, sand and gravel, clay products and stone.
Source: Statistics Canada Catalogue 26-202; Economic Research & Analysis Division, Cabinet Secretariat.

In addition to being the largest component of the Newfoundland and Labrador mining industry, the production of iron ore in the Province is prominent nationally in terms of its contribution to total iron ore output in Canada. The output of the Canadian iron ore industry in 1987 was approximately 38 million tonnes and of this total, almost 50 percent was produced in the Province's iron ore mines which are located in Labrador.

MAP V.1.1


PRODUCING MINES AND MAJOR EXPLORATION PROJECTS IN NEWFOUNDLAND AND LABRADOR
Production
Producing Mines
Exploration
Gold Exploration Projects
Other Exploration Projects
LABRADOR
0 150
Kilometres
Labrador City (Iron Ore)
Wabush (Iron Ore)
Roddickton
NEWFOUNDLAND
Daniel's Harbour (Zinc)
Daniel's Harbour
Baie Verte (Asbestos)
Jackson's Arm
Ming's Bight
Goldenville
Rambler
Sop's Arm
Pond Leamington
Gander Bay Road
Corner Brook (Limestone, Shale)
Buchans
Lower Cove
Tally Pond
Duck Pond
Midas Pond
Great Bend
Flat Bay (Gypsum)
Nut Cove
Milton (Shale)
Nut Cove (Slate)
Kim Lake
Little River
Cinq Cerf Brook (Gold)
Peter Snout
Hope Brook (Chetwynd)
Cape Ray - Main Zone
Hickeys Pond
Manuels (Pyrophyllite)
Burin Knee
Villa Marie (Silica)
St. Lawrence (Fluorspar)
St. Lawrence
0 50 100
Kilometres
Source: Government of Newfoundland and Labrador
MUNCL

The output of the Newfoundland and Labrador mining industry is sold primarily in markets located outside Canada. The value of mineral exports shipped to non-Canadian markets in 1986, the most recent year for which export data is available, was approximately $645 million; about 95 percent of the total was accounted for by exports of iron ore. The largest proportion of iron ore exports are destined to markets in the United States; other markets for iron ore products include Europe and Asia. Mineral exports other than iron ore include asbestos, gypsum, zinc and pyrophyllite which are shipped to locations around the world. Map V.1.2 illustrates the proportion of the Province's minerals exports shipped to various international markets in 1986.

The mining industry has changed considerably over the past 40 years in terms of both its size and the distribution of output. In 1950, there was only one iron ore mine in the Province, located on Bell Island, and output from the mine accounted for only 22.7 percent of the total value of mineral production. This mine was considerably more labour intensive than the iron ore mines which exist today as demonstrated by the fact that in 1950 in excess of 2,000 workers were required to produce only one million tonnes of iron ore as compared to about 2,000 iron mine workers in 1987 producing nearly 19 million tonnes of iron ore. The dominant player in the Newfoundland and Labrador mining industry in 1950 was ASARCO which operated a base metal mine in Buchans and accounted for about two-thirds of the total value of mineral production. This mine operated for nearly sixty years, a lengthy period of time given the non-renewable nature of all mineral deposits. Altogether, in 1950 four mining companies operated five mines in the Province and these, together with the percentage distribution of the value of mineral products produced are listed in Table V.1.2. The five mines employed about 3,600 workers in 1950 and the total value of output amounted to $25.8 million, or less than $7,200 per worker. Productivity gains in the mining industry over the past 30 years are evident from the fact that in 1987 twelve mines employed about 3,900 workers and the total value of output amounted to $768 million, or more than $195,000 per worker, nearly 28 times as much as in 1950.

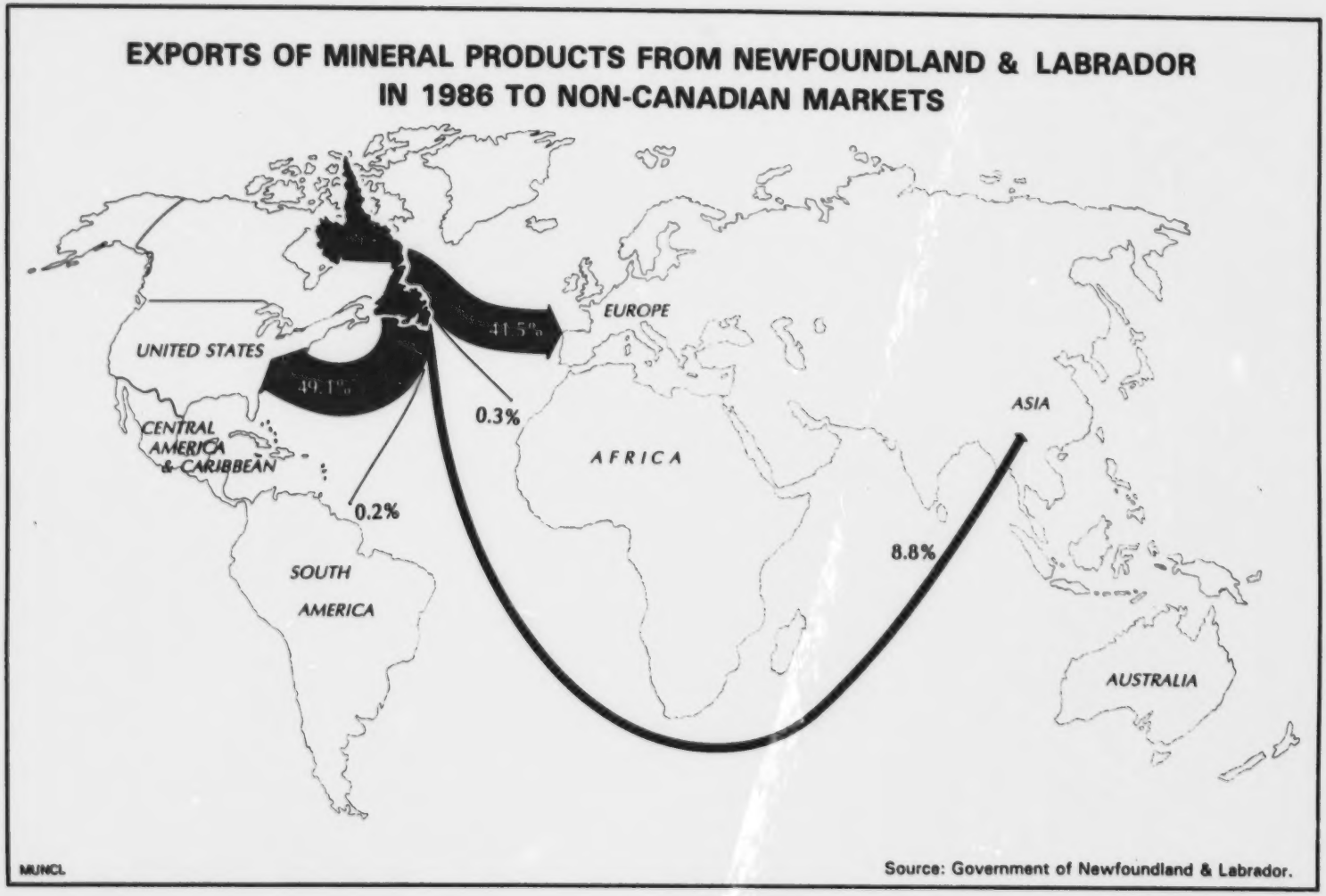
Table V.1.2

PERCENTAGE DISTRIBUTION OF TOTAL VALUE OF MINERAL PRODUCTION, NEWFOUNDLAND AND LABRADOR, 1950

Company	Location	Mineral	Percent of Total
ASARCO & Price Company Ltd.	Buchans	Zinc	37.0
Dominion Steel and Coal Company, (DOSCO)	Bell Island	Iron Ore	22.7
ASARCO & Price Company Ltd.	Buchans	Lead	20.1
ASARCO & Price Company Ltd.	Buchans	Copper	5.8
Newfoundland Fluorspar Limited & St. Lawrence Corporation	St. Lawrence (2 mines)	Fluorspar	5.0
ASARCO & Price Company Ltd.	Buchans	Silver	1.8
ASARCO & Price Company Ltd.	Buchans	Gold	1.4
Dominion Steel and Coal Company, (DOSCO)	Aguathuna, Port au Port Peninsula	Limestone	0.1
		Other	6.1

Source: Historical Statistics of Newfoundland and Labrador Vol. II (IV), Tables M-1 and M-2; Economic Research and Analysis Division, Cabinet Secretariat.

MAP V.1.2


EXPORTS OF MINERAL PRODUCTS FROM NEWFOUNDLAND & LABRADOR
IN 1986 TO NON-CANADIAN MARKETS
EUROPE
41.5%
UNITED STATES
49.1%
0.3%
ASIA
CENTRAL
AMERICA
& CARIBBEAN
AFRICA
0.2%
8.8%
SOUTH
AMERICA
AUSTRALIA
MUNCL
Source: Government of Newfoundland & Labrador.

The rapid development of the Province's mining industry over the past 30 years is evident from Table V.1.3. Since the early 1950s, a total of 27 different mines have operated in the Province for some period of time. Clearly, many of these mines are no longer operating today, however, this is not surprising since the non-renewable mineral deposits on which production is based are finite. The operating life of a mine is determined by the size of the economic reserves and the rate at which they are extracted. Barring changes in mineral commodity prices which can affect the eco-

Table V.1.3

OPERATING MINES AND QUARRIES IN NEWFOUNDLAND AND LABRADOR SINCE 1949

Company	Location	Mineral(s)	Dates of Operation
Trinity Brick Products Limited	Milton	Brick Shale	1866-present
Wabana Iron Ore Mines	Bell Island	Iron Ore	1894-1966
Aquathuna	Port au Port	Limestone	1913-1965, 1967
Price-Asarco Inc.	Buchans	Base-Precious Metals(1)	1928-1984
St. Lawrence Corporation	St. Lawrence	Fluorspar	1933-1961
Newfoundland Fluorspar Limited	St. Lawrence	Fluorspar	1937-1978
Flinkote Mines Limited(2)	Flat Bay	Gypsum	1951-1987
North Star Cement Limited	Corner Brook	Shale, Limestone	1952-present
Iron Ore Company of Canada	Schefferville	Iron Ore	1954-1983
Newfoundland Minerals Limited	Manuels	Pyrophyllite	1957-present
Tilt Cove Mine	Tilt Cove	Copper, Gold, Nickel	1957-1967
Little Bay Mine	Little Bay	Copper, Gold	1961-1969
Iron Ore Company of Canada	Labrador City	Iron Ore	1962-present
Advocate Mines Limited	Baie Verte	Asbestos	1963-1981
Consolidated Rambler Mines	Baie Verte	Copper, Gold, Silver	1964-1982
Wabush Mines	Wabush	Iron Ore	1965-present
Whalesback Mine	Springdale	Copper	1965-1972
Gullbridge Mines Limited	Gull Pond	Copper	1967-1971
Dunville Mining Company Limited	Villa Marie	Silica	1968-present
Green Bay Mining Limited	Little Deer Pond	Copper	1974
Newfoundland Zinc Mines Limited(3)	Daniel's Harbour	Zinc, Cadium	1975-present
J. Tyler Mining Limited	Collier Point	Barite	1980
Baie Verte Mines Inc.	Baie Verte	Asbestos	1982-present
Eagle Resources Limited	Collier Point	Barite	1983-1985
Island Tile and Slate Company	Nut Cove	Slate	1986-present
Hope Brook Gold Inc.	Cinq Cerf	Gold	1987-present
St. Lawrence Fluorspar Limited	St. Lawrence	Fluorspar	1987-present

(1) Base-precious metals include copper, lead, zinc, gold, silver and barite.
(2) Flinkote Mines Limited, owned by Imasco, was sold to Domtar Inc. in March, 1987 and the name was changed to St. Georges Gypsum Mines.
(3) The zinc mine in Daniel's Harbour was closed down in April, 1986. Production resumed in Septem ber, 1987.

Source: Rex V. Gibbons and Norman L. Mercer, 1982, 'Mining in Newfoundland and Labrador: from 1949 to 1982', The CIM Directory 1982; Provincial Department of Mines; Economic Research and Analysis Division, Cabinet Secretariat.

nomics of a mining establishment, a mine closure can be predicted well in advance of its occurrence. The newly opened Hope Brook Gold Mine, which currently has an expected economic life of 10 years, is a case in point. It is fair to say that of all the mines that have come and gone in the history of the Province's mining industry, none has had an impact on the industry that could compare to that which resulted from the development of iron ore deposits in the Province.

The history of iron ore mining in the Province dates back to the late 1800s and the opening of the Wabana iron mine on Bell Island. During its 71 year operating life, the Wabana Mine shipped more than 80 million tonnes of iron ore, mainly to its parent company in Sydney, Nova Scotia where the ore was processed. More than 2,000 workers were employed at the mine until the late 1950s when a combination of quality problems with the remaining reserves, increased competition from other producers and a recession in 1958 led to the closure of the mine. On June 30, 1966 the Wabana Iron Ore Mine, which had for a time been the largest iron ore mine in the British Empire, closed permanently. While the mine closure had a significant impact on the Bell Island economy, the loss of output was barely noticeable since between 1954 and 1966, three new iron ore mines had come into production in Labrador.

The first new iron ore deposit to be developed in the Province straddled the Quebec-Labrador boundary near Schefferville, Quebec. The massive deposits of iron had been discovered in 1892 but no serious attempt was made to develop the deposits until the 1940s. In the early 1940s, Hollinger North Shore Exploration Company, a subsidiary of Hollinger Consolidated Gold Mines, joined forces with the M.A. Hanna Company of Ohio and began exploration and development work in the Schefferville area. By 1949 proven reserves of iron ore in the Schefferville area exceeded 400 million tonnes. In 1949, the Hollinger and Hanna companies joined forces with ARMCO, Labrador Mining, National, Republic, Wheeling Pittsburg and Youngstown to form the Iron Ore Company of Canada (IOCC) and development of the Schefferville mine commenced that year.

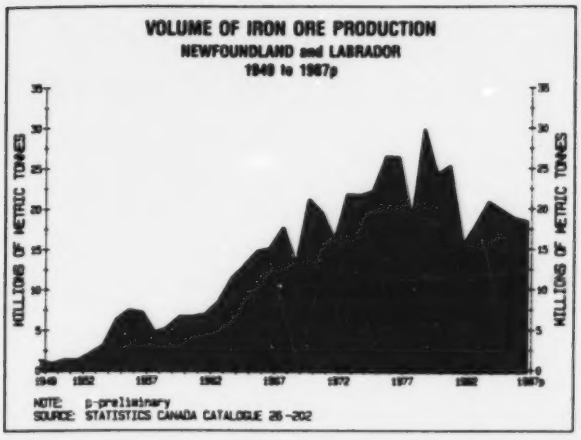
The development of the Schefferville site was a massive construction project which included the installation of two hydroelectric plants, shipping and receiving facilities at Sept-Illes, roads and mine spurs, ore processing plants and loading facilities, construction and maintenance facilities as well as the construction of the 573 kilometre Quebec North Shore & Labrador Railway. In addition to the construction of infrastructure directly related to production facilities, the project completion required the construction of landing strips, temporary facilities to house and feed 6,900 construction workers and the construction of two townsites to house permanent employees. The completion of the project required the largest civilian airlift in history and an investment of about $250 million. Following five years of intensive construction activity, the first shipment of iron ore was made on July 15, 1954 and one year later the Iron Ore Company of Canada was the largest iron ore producer in Canada.

The development of Wabush Mines in Labrador followed close on the heels of the completion of the Schefferville project. In 1956, Pickands Mather and Company expressed interest in the mining potential of a 7,500 square kilometre area which was believed to contain one of the largest iron ore deposits in Western Labrador. Development of the Wabush Mines project, which was managed by Pickands Mather and Company and owned by STELCO, DOFASCO, Inland Steel, Wheeling Pittsburg, Interlake, Finsider and Moore McCormack Resources, began in 1957. The mine was brought into production in 1965 after an investment of about $235 million in the construction of a plant, a railway link to the Quebec Northshore & Labrador Railway and the townsite of Wabush. The mine had a rated capacity of 6 million tonnes per year and the ore produced was mined from open-pit deposits and shipped to markets in Canada, the United States and Europe.

In 1959, the development of the last major iron ore mine in the Province was initiated. The Carol Lake project was undertaken by the IOCC in conjunction with Bethlehem Steel. This project involved the development of iron ore deposits around Wabush Lake and required (at a cost of approximately $150 million) the construction of roads, a railway link, airstrips, production facilities and a new residential centre, Labrador City. The mine was initially brought into production in July 1962, however, a number of expansions have taken place since that time. By 1981, production was

about 18.5 million tonnes of concentrate, 10.5 million tonnes of which was further processed into pellets.

Diagram V.1.2



The start up of the three iron ore mines had a tremendous impact on the output of the Province's mining industry. Between 1954, when Schefferville was brought on stream, and 1968, after IOCC (Labrador City) came into production, the volume of iron ore produced in the Province experienced a fivefold increase to nearly 18 million metric tonnes and by 1979 at the peak of production, the volume of iron ore produced in the Province reached 30.2 million metric tonnes. The volume of iron ore production between 1949 and 1987 is illustrated in Diagram V.1.2. The diagram reveals that the general trend in iron ore production until 1979 was upward with the exceptions of 1969, 1972 and 1978 when labour disputes reduced the levels of production. In 1979, at the peak of iron ore production, the total value of mineral production in the Province was $1.1 billion, the highest level in the history of the Province's mining industry. The contribution of the iron ore industry to the value of production is illustrated in Diagram V.1.1. Following peak production in 1979, output in the mining industry declined with the volume of iron ore production. Declining production was related to the termination of operations at Schefferville in 1981 and temporary shutdowns at both Labrador City and Wabush in 1982.

The shutdown of the Schefferville operation and the falling volume of iron ore production in the 1980s has been mainly a response to changing market conditions. On the demand side of the market, slower economic growth in the international economy resulted in a reduced demand for steel and, consequently, for iron ore. In addition, the intensity of use of minerals and metals in production processes has declined in recent years as a result of technological change. These factors have contributed significantly to a reduction of international demand for iron ore.

On the supply side, high prices in earlier years encouraged increased capacity throughout the world resulting in the introduction of large supplies of high grade, low cost iron ore into the market. This, combined with the excess supply of iron ore, has contributed to falling prices. These changes in the market place have made it difficult for producers to operate within a profitable margin.

Problems created by declining profit margins have been further aggravated by rising oil prices and production costs. In 1985 the Federal Government introduced a policy which allowed the price of oil in Canada to rise to world levels and this weakened the ability of Canadian mining operations to compete against major competitors such as Brazil and Sweden. The adjustment to higher world oil prices in these countries, which had been paying the world price for oil for years, was well underway; for Canadian producers, the adjustment process had just begun. Furthermore, wages paid to workers in Labrador rose during the 1970s as a result of labour disputes making it increasingly difficult for the mines to compete with heavily subsidized Brazilian mines. Together, these factors served to erode the competitive position of producers in Newfoundland and Labrador in the world market.

The IOCC and Wabush Mines have responded aggressively to the difficult business environment confronting the industry. The companies have initiated research and development programs and taken steps to increase productivity. The IOCC is developing a new binder for the production

of iron ore pellets which will be less costly to use and which will reduce the silica content of the final product while Wabush Mines is researching techniques which will improve iron ore recovery rates. Furthermore, the output per worker has increased by more than 50 percent since 1980. The companies have also introduced new technology into the production process and diversified the products produced. Coke breeze has been added to iron ore concentrate at pellet plants and wet grinding mills have been installed, both of which have resulted in energy savings. IOCC now produces three types of pellets and in 1988 Wabush Mines plans to produce pellets with varying manganese content to meet the needs of its customers. As a result of such efforts, the iron ore companies have improved their competitive position in the world market and are now much better positioned to compete in what remains an uncertain, but improving market.

In 1987, the value of iron ore production was about $685.4 million and performance of the Province's iron ore industry remained relatively unchanged from the previous year. The volume of production amounted to 18.8 million metric tonnes of ore, about two percent below the level of output in 1986. Unlike earlier years, the reduction in output in 1987 was not market related. During the first quarter of the year, labour disputes occurred at both Wabush Mines and at IOCC resulting in a fall in production and a slight decrease in shipments.

Demand for iron ore should improve in 1988 as steel production is forecast to increase by 1.0 percent and demand for pellets in Europe will strengthen as a result of the closure of sinter plants due to environmental restrictions. On the supply side, Brazil will open three small mines and production in India will increase. An oversupply of iron ore will continue to exist world wide but supplies of iron ore pellets will tighten. Overall, market conditions in 1988 are expected to be competitive but somewhat improved. In response to the firming of demand for iron ore pellets, both Wabush Mines and the IOCC will produce pellets at capacity levels. Wabush Mines will produce 6.0 million tonnes of pellets and IOCC will produce 10.0 million tonnes. The IOCC expects to maintain concentrate production at the levels achieved in 1987. Furthermore, Wabush Mines and the IOCC have secured 7.5 percent increases in the price for pellets in European markets. The labour contracts signed in 1987 will also favour improved performance in 1988 and in the future since the three year agreement will reduce the likelihood of disruptions in production due to strikes.

In addition to the iron ore mines, the Province's mining industry includes a number of mining companies which produce a wider range of mineral products than the iron ore industry. The output of these producers is mainly for sale in export markets, although certain products are for consumption within the Province. A list of the companies that comprise this component of the mining industry and the number of workers employed is presented in Table V.1.4 while Map V.1.1 illustrates the spatial distribution of the mining operations throughout the Province. A discussion of these mining operations is provided below with the exception of Trinity Brick Products Limited, North Star Cement Limited and the Island Tile and Slate Company. Although these operations are often viewed as mineral producers, they are primarily engaged in manufacturing and for this reason, are discussed in Section V.4.3 of this report.

Table V.1.4

MINING COMPANIES AND EMPLOYMENT NEWFOUNDLAND AND LABRADOR: 1987

Company	Mineral Produced	Employment
Iron Ore Company of Canada	Iron Ore	1,536
Wabush Mines	Iron Ore	532
Baie Verte Mines Inc.	Asbestos	382
Newfoundland Zinc Mines Limited	Zinc	145
Hope Brook Gold Inc.	Gold	140
St. George's Gypsum Mines Inc.	Gypsum	89
St. Lawrence Fluorspar Limited	Fluorspar	55
Newfoundland Minerals Limited	Pyrophyllite	17
Dunville Mining Company	Silica	8

Note: Other mineral producers in the Province include Island Tile and Slate, North Star Cement and Trinity Brick Products Limited. These producers are discussed in Section V.4.3 of this report since they are primarily engaged in manufacturing.

Source: Provincial Department of Mines; Economic Research and Analysis Division, Cabinet Secretariat.

Baie Verte Mines Inc., previously owned by Advocate Mines Limited, is the sole producer of asbestos in the Province. In February, 1986, the Provincial Government approved a $12 million equity investment for Baie Verte Mines to facilitate the removal of overburden in the West Pit. This will improve access to higher grade ore and decrease the cost of mining the asbestos. The waste removal program will continue until April, 1988 at a rate of 1.5 million tonnes per month. Rock removal will continue on an ongoing basis at a rate of 500,000 tonnes per month after the major program is completed in April. Last year the mine experienced the highest level of activity since it was reopened in 1982 and approximately 380 workers were employed. Production of asbestos was 60,000 tonnes valued at $21 million in 1987, an increase of about 28 percent in value and 40 percent in volume. The price of asbestos is expected to increase in 1988 and continued strong market demand makes the outlook for this operation optimistic in 1988.

An agreement was reached in late June between the owners of the Newfoundland Zinc Mines, Teck Corporation and the Provincial Government for the reactivation of the Daniel's Harbour zinc mine. The mine was closed down in April, 1986 due to a sharp decline in zinc prices. The agreement provides for a $2 million contribution from the Provincial Government and a $3 million commitment from the Teck Corporation toward start-up costs. The Company has also committed $500,000 for exploration work and development drilling. It is hoped that new ore deposits will be identified which will increase the existing proven supply of ore. The results of the Company's exploration program should be known in the first half of 1988.

Newfoundland Zinc Mines began processing on September 21, 1987 after several weeks of extracting and stockpiling ore. One shipment of zinc concentrate was made in 1987 and current production, which employs about 145 workers, is being stockpiled until shipments resume in the spring. Production for 1987 was 13,358 kilograms valued at $17 million. The facility will operate all year in 1988 resulting in a significant increase in production. The demand for zinc is expected to be strong in 1988.

On August 22, 1984, BP-Selco announced the discovery of gold near Cinq Cerf Brook on the South Coast of the Province and in 1986 a decision was taken to develop a gold mining and milling complex five kilometers inland from Couteau Bay. Construction of the Hope Brook mine began in September, 1986 and is expected to be completed in 1988. Development of an underground mine and construction of a conventional gold mill are currently in progress and these are scheduled to

begin production this fall. The operation of the mine will require about 270 workers and the total cost of the project will amount to approximately $162 million.

Production from the open pit mining and heap leaching process at Hope Brook began in September, 1987 and approximately 12,000 ounces of gold were produced valued at $7.8 million. Employment at the end of 1987 was approximately 350 persons comprised of 140 employees of Hope Brook Gold Inc. and 210 construction workers. The company expects to produce about 120,000 ounces of gold in 1988.

On May 1, 1987, Domtar Inc., the owner of St. Georges Gypsum Mines Inc., announced that the mine would close at the end of the year. Production from the mine ceased on November 20 and shipping was discontinued around mid-December. A committee of both Government and Company representatives has been formed to find a new operator and some inquiries concerning the purchase of the operation have been received. In 1987, 410,000 metric tonnes of gypsum, valued at $4.7 million dollars, were produced.

Efforts to reactivate the fluorspar mine at St. Lawrence, which had been inactive since February, 1978, began in 1983 and attracted the interest of Minworth Ltd. of the United Kingdom. In 1984, St. Lawrence Fluorspar Limited was incorporated as a subsidiary of Minworth to redevelop the mine and work began on the reactivation of the mine in the fall of 1985. The Company completed the construction of a mill and development of the mine at the Blue Beach North Vein during 1986. During the first year of operations the new mine encountered some difficulties. In the first half of 1987, the Company experienced problems with product quality, however, these were resolved later in the year. In November of 1987, marketing difficulties caused a temporary shutdown and layoff at the mine, however, production will be resumed early in 1988. The value of fluorspar production in 1987 is estimated at $1.7 million and employment reached 73 persons. Three shipments of fluorspar were sold in the United States market during 1987 and one in the United Kingdom. Both production and employment are expected to increase in 1988.

Newfoundland Minerals Limited, the only producer of pyrophyllite in Canada, is a year-round operation which usually employs 17 people. The main market for the product is the United States where pyrophyllite is used in making ceramic tiles. The value of production rose in 1987, and in 1988 employment and production are expected to equal the levels achieved in 1987.

Dunville Mining Company, a subsidiary of Albright and Wilson, extracts silica which is used as a flux by the phosphorus plant in Long Harbour. The operation, which is seasonal, shut down for the winter months on October 8, 1987 although shipping continued during the fourth quarter. The Company plans to re-open on May 1, 1988. The value of production declined slightly in 1987 compared to 1986; eight people were employed during the production period. Output is expected to increase slightly in 1988. The company also operates an aggregate crushing plant in Long Harbour which uses raw material from the furnaces of the phosphorus plant. The operation is designed to produce and ship about 320,000 tonnes of crushed slag aggregate in the form of five different size products. The product is used for asphalt mixes and drainage systems in the state of Florida. Approximately 170,000 tonnes of crushed slag was produced and 116,000 tonnes shipped in 1987. A substantial increase in production and shipments is expected for 1988.

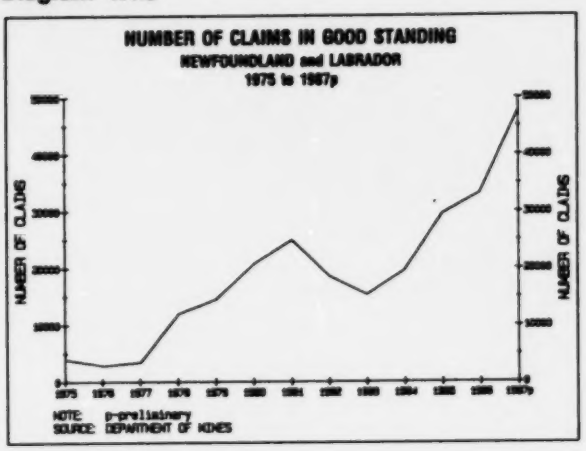
Newfoundland Resources & Mining Company Limited will establish a limestone quarry and processing facility in Lower Cove on the Port-au-Port Peninsula in 1988. The total capital cost of the project, which will involve the construction of a deep water shipping facility and the purchase of mining and processing equipment, is estimated at $20.6 million. The product will be shipped by self-unloading vessels to markets in the northeast and mid-Atlantic United States. The operation is scheduled to begin production by October, 1988 and shipments will follow by April, 1989. Approximately 25 permanent jobs will be created when the quarry is in operation.

English China Clays (ECC) International Ltd. completed an exploration program for high quality marble in the Roddickton area in 1987 and shipped a 100-tonne bulk sample of white marble

to its processing plants in the United States and Europe for further testing. If the results of these tests are favourable, the Company is considering mining and exporting marble from Roddickton.

Changes made to mineral policy in the 1970s have served to generate renewed interest in the mining potential of Newfoundland and Labrador. In 1977 and 1978, the Mineral act and the Mineral Holdings Impost Act were introduced. These were designed to remove the concessions system which was introduced in the 1950s and set minerals exploration on a more competitive basis. By the end of 1981, 80 percent of the mineral rights on the Island and 95 percent of the mineral rights in Labrador were available for claim staking. Previously, only about 10 percent of the Province's total 404,520 square kilometre area was available for claim staking.

Diagram V.1.3



The Mineral Holdings Impost Act stipulated that groups holding exploration concessions must either keep their claims in good standing or pay a tax to maintain their rights. For a claim to be considered in good standing a specified amount must be spent over a five year period. A claim in good standing is generally perceived to be an indication that the relevant territory is viewed by the exploration company as promising enough to justify continued exploration. Prior to the introduction of the Impost Act, exclusive exploration rights relating to large tracts of land in the Province were held by NALCO, Brinco and a few other companies, however, following the introduction of the new Act, the companies began to reduce their land holdings and, as Diagram V.1.3 illustrates, exploration increased dramatically as other companies entered the scene.

Table V.1.5

CLAIMS STAKED AND CLAIMS IN GOOD STANDING
NEWFOUNDLAND AND LABRADOR: 1981 TO 1987

Year	New Claims Staked	Total Claims in Good Standing December 31
1981	13,661	25,012
1982	4,670	18,517
1983	4,522	15,288
1984	11,048	19,662
1985	15,257	29,632
1986	14,594	33,269
1987	22,095	47,675

Source: Provincial Department of Mines.

The number of claims staked in the Province has increased dramatically since 1977 and in 1987, as indicated in Table V.1.5, mineral exploration in Newfoundland and Labrador was at its

highest level ever. A total of 47,675 claims were in good standing as of December 31, 1987, an increase of over 40 percent compared to 1986. Preliminary estimates indicate that the value of mineral exploration was also at a very high level in 1987. Approximately $26.3 million was spent on exploration throughout the Province last year, more than double the $11.8 million invested in 1986. Employment generated by these expenditures amounted to 500 persons or 12.7 percent of mining industry employment.

As illustrated in Map V.1.1, there are many exploration projects ongoing in the Province. Some of the most interesting and promising ones include the Tally Pond-Duck Pond base metals project, the Cape Ray gold project, the Little River gold project, the Ming's Bight gold project and the Roddickton marble project. The Tally Pond-Duck Pond project in central Newfoundland is being explored by Noranda Exploration Company Ltd. This high grade zinc-copper-lead-silver-gold deposit is large and has development potential. The Cape Ray gold deposit, northeast of Port-aux-Basques, was discovered in the late 1970s and the potential gold reserve is about two million tons. The Little River gold project is the largest exploration program in the Bay D'Espoir area and drilling by Westfield Minerals in 1986 and 1987 showed significant gold mineralization. The Ming's Bight gold project on the Baie Verte Peninsula is being explored by Noranda Exploration and initial gold discoveries were quite high grade.

V.2 PRIMARY FORESTRY

Activities in the primary forestry industry, which include both harvesting and management of the Province's forests, accounted for 2.3 percent of Gross Domestic Product (GDP) in the goods producing sector in 1986 and 0.8 percent of total GDP. Of the approximately 400 municipalities (a municipality may encompass more than one community) in Newfoundland and Labrador, about 80 have a significant number of people employed in primary forestry. The harvesting of timber in the Province employed an estimated 1,400 persons on an annual average basis in 1987. Since this is largely seasonal work, annual average employment estimates understate the number of jobs supported by the industry. (The limitations of annual average employment statistics are discussed in Section VII). In addition, this estimate does not include those employed in forest management activities.

The total productive forest land of insular Newfoundland is approximately 2.8 million hectares. In addition, there is a commercial timber concentration on 360,000 hectares of productive forest in the south-central portion of Labrador near Goose Bay. About 56 percent of productive forest land on the Island is controlled by the Province's pulp and paper companies. These companies generally occupy the more productive forest lands in the interior of the Island.

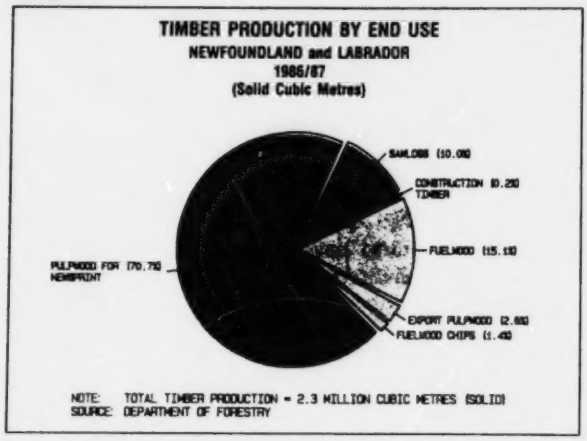
Management of the Province's forest resources is the responsibility of the Provincial Government. Some of the funding required for management activities is provided through Federal-Provincial Economic Regional Development Agreements. There have been three consecutive forestry agreements since 1974 providing for total expenditures of $175 million. The first Agreement provided for the restructuring and expansion of the Provincial forest service, thus providing the Province with the capability to undertake large intensive forest management efforts. The second Agreement provided for silviculture programs such as seedling production, tree planting, precommercial thinning and the rehabilitation of non-productive timber stands.

The latest Forest Resource Development Agreement signed in March, 1986 provides $48 million over five years to continue many of the initiatives of the previous agreement. Silviculture activities carried out during 1986 and 1987 under the Agreement generated over 4,000 person months of employment directly. About four-fifths of the total funding is allocated to direct forest resource management activities including silviculture; construction of access roads; forest management, inventory and planning; and forest protection. The remainder of the funding under this Agreement will be spent on research and development, opportunity identification and technology transfer as well as human resource development, communications, economic research and program administration. The two latest Agreements were designed to enhance the productivity of the resource through accelerated forest growth and will help to increase the long term supply of timber for use by the Province's forest industries.

One of the most important aspects of Government's management responsibilities is the protection of the forest resources from damage by insects, disease and forest fires. Government's efforts to improve its forest fire fighting capabilities in the Province met with success in 1987. The island portion of the Province experienced the worst forest fire hazard conditions observed in over 50 years this past summer as a result of extremely dry weather conditions. From May to September, the number of forest fires reported reached 287, up by 48.7 percent from 1986. Despite the increase in the number of fires, the total area burned declined to 17,128 hectares, a decrease of 84.2 percent over 1986. This improved fire fighting performance resulted from public co-operation encouraged by a comprehensive public awareness campaign undertaken by Government and industry, a five week limited ban imposed on woods operations by the Crown (and supported by the forest products industry) and improved fire fighting capabilities within the Province. For the first time ever, a Helitack crew based in Gander was used to respond quickly to fires in the central part of the Province. In addition, the availability of two new CL-215 waterbombers acquired in May under the Federal/Provincial Co-operative Supply Agreement, along with six existing Canso Waterbombers, improved the Province's air support response time and overall fire fighting capabilities. The Province acquired two additional CL-215 waterbombers under this program in early 1988.

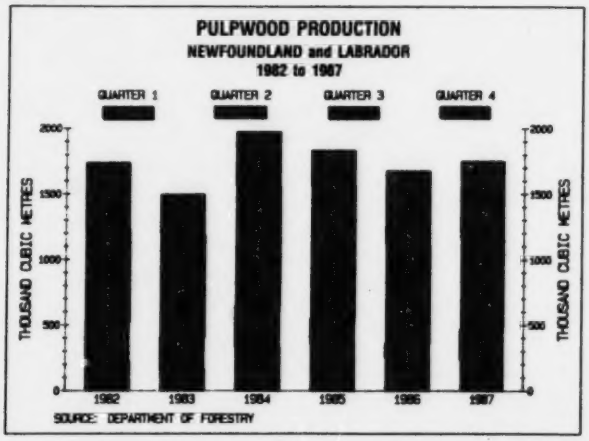
The total cost of the forest fire fighting program in 1987 is estimated at $3.1 million, down from $4.4 million in 1986. The reduction in costs, despite the increased number of fires reported in 1987, reflects the fact that much less area burned in 1987. The reduced costs also reflect the more productive use of capital equipment in 1987, as witnessed by the expanded waterbomber fleet and the use of a Helitack crew. The improved forest protection capability will also help to ensure a long term availability of timber for the Province's forest based industries.

Diagram V.2.1



There were approximately 2.3 million cubic metres of timber harvested throughout the Province during the 1986/87 fiscal year. Timber production can be classified by end use (i.e., final product) as illustrated in Diagram V.2.1. About 81 percent of the total timber produced was used within the Province as raw material in secondary processing such as pulp and paper, sawmilling and construction timber. The remaining 19 percent was burned locally as fuel except for a small amount (2.6 percent) which was exported.

Diagram V.2.2



Pulpwood harvested in the Province for secondary manufacturing of newsprint by the Province's three pulp and paper mills is by far the largest component of the total harvest at 70.7 percent in 1986/87. These companies meet their pulpwood requirements through a combination of company logging operations and purchases from private contractors. Production of pulpwood, which is illustrated in Diagram V.2.2, increased by 4.6 percent to 1.75 million cubic metres in 1987 as a result of increased demand by the newsprint industry. Production was hampered in the third quarter by the five week limited ban on commercial and domestic woods operations. As a result, the level of production in the third quarter of 1987, traditionally the strongest period of the year, was the lowest recorded in the last six years.

Sawlogs, also used in secondary manufacturing, accounted for 10 percent of all timber harvested in 1986/87. The harvesting of sawlogs is concentrated on the Bonavista Peninsula, and in the Central region of the Island from Gambo to Springdale. The sawlog operations make an important contribution to economic activity in rural areas of the Province, both as a full time and seasonal source of employment and income.

The final category of timber produced for secondary processing is construction timber, representing about 0.2 percent of total timber production in 1986/87. This timber is generally of larger dimension and tends to require less processing than sawn lumber. Construction timber is sometimes harvested by fishermen in the off season for wharf construction and by commercial operators in general.

The remaining 19 percent of timber produced is consumed with little, if any, secondary processing. Timber harvested for fuelwood accounted for 15.1 percent of total timber production in 1986/87. Harvesting is concentrated near population centres and the wood is usually burned for domestic use by those who harvest it. There are, however, commercial operators who harvest and transport wood, particularly white birch, to major population centres and sell it to home owners. Fuelwood harvesting and burning is an important source of economic activity in the Province since it displaces imported fuel oil or other energy. Although little money changes hands relative to the volume of fuelwood harvested, a positive contribution is made through self-employment and household income-in-kind.

Pulpwood harvested for export represented 2.6 percent of Provincial timber cutting in 1986/87. A new pulpwood exporting operation was established at Goose Bay in 1986 and operated throughout the year in 1987. The company received a five year timber allocation, thus ensuring some security of supply for their operations. During 1987, there were six permits issued to three wood export contractors by the Department of Forestry for the export of 125,000 cubic metres of pulpwood. Preliminary estimates indicate that exporters located in Lewisporte, Carmanville, Bay d'Espoir and Goose Bay shipped the bulk of the 1987 allocation in debarked form to European markets. The volume of pulpwood exported varies considerably from year to year due to both wood availability and market requirements. While the only processing which takes place in the Province is the debarking of the pulpwood, local employment impacts through harvesting, processing and transportation are important.

About 1.4 percent of total timber production in 1986/87 was used as woodchips for fuel. This is a relatively new technology which was introduced to the Province on a demonstration basis by both levels of government in the late 1970s. This technology has been adopted by four users in the Province including Abitibi-Price in Grand Falls, the James Paton Memorial Hospital in Gander, the Newfoundland Hardwoods plant in Clarenville and the Clarenville Vocational School. In general, woodchips are produced from non-productive timber stands or are obtained from logging residue which is present after commercial timber harvesting. Such increased utilization techniques enhance the available timber supply by utilizing formerly non-commercial portions of the resource.

In 1987, Newfoundland and Labrador Hydro announced its intention to proceed early in 1988 with construction of a five megawatt, wood-chip generation plant in Roddickton. The plant, which should begin production in 1989, will consume approximately 50,000 tonnes of forest biomass annually which will be supplied in the form of residual woodchips from sawlog harvesting, and through the harvesting of damaged and decadent stands. Additional biomass will come from sawmill waste. The supply of raw materials to the plant will provide about 40 to 50 seasonal, but long term, jobs. Further resource enhancement benefits will also be realized through the integrated harvesting and clean-up of low quality, non-productive forest land.

While there appears to be little room for expansion of timber harvesting based on the existing forest resource, improved utilization techniques and increased silviculture effort will enhance long term timber supply on the Island. Furthermore, should economic conditions prove favourable, a major new industrial wood user could be established in Labrador, thus increasing the level of harvesting in the Province substantially.

The outlook for the primary forestry industry in 1988 is positive. The level of newsprint production is expected to be at least as high as in 1987, which represented an increase over 1986. There should also be an increase in the level of pulpwood production to compensate for lost production in 1987 due to inclement weather. Domestic fuelwood production should remain fairly stable as oil prices are not expected to change dramatically in 1988. Demand for domestic lumber should remain strong and contracts to supply export pulpwood should remain firm, particularly in Goose Bay. While the wood-chip generation plant at Roddickton will not commence operation until sometime in 1989, some harvesting activities may take place in 1988 to provide an initial stockpile of biomass fuel. The level of forest management activities for 1988 should at least equal those realized in 1987. Overall, the primary forestry industry is expected to experience a good year in 1988.

V.3 PRIMARY FISHING

The Newfoundland and Labrador coastline is bordered by some of the richest fishing grounds in the world. It is this resource that led to the initial settlement of the Island in the seventeenth century. Today, as in the past, the fishery forms the economic mainstay of the Province's economy.

Diagram V.3.1

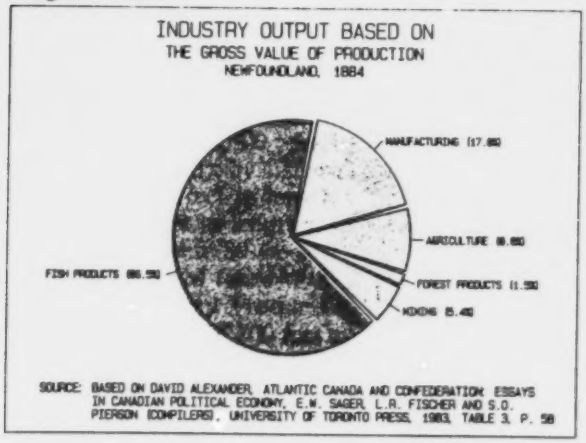
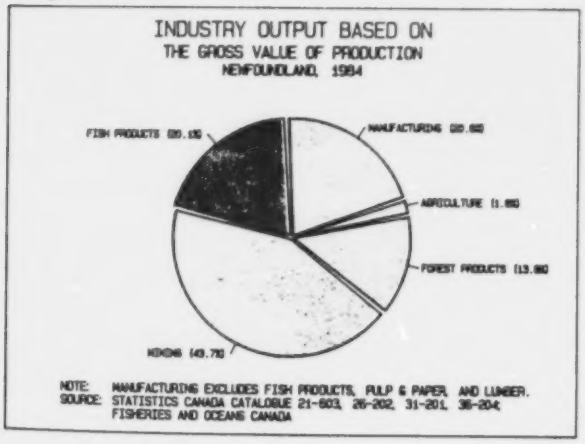

INDUSTRY OUTPUT BASED ON
THE GROSS VALUE OF PRODUCTION
NEWFOUNDLAND, 1884
MANUFACTURING (17.8%)
AGRICULTURE (8.6%)
FOREST PRODUCTS (1.5%)
MINING (5.4%)
FISH PRODUCTS (66.5%)
SOURCE: BASED ON DAVID ALEXANDER, ATLANTIC CANADA AND CONFEDERATION: ESSAYS IN CANADIAN POLITICAL ECONOMY, E.W. SAGER, L.R. FISCHER AND S.O. PIERSON (COMPILERS), UNIVERSITY OF TORONTO PRESS, 1983, TABLE 3, P. 58

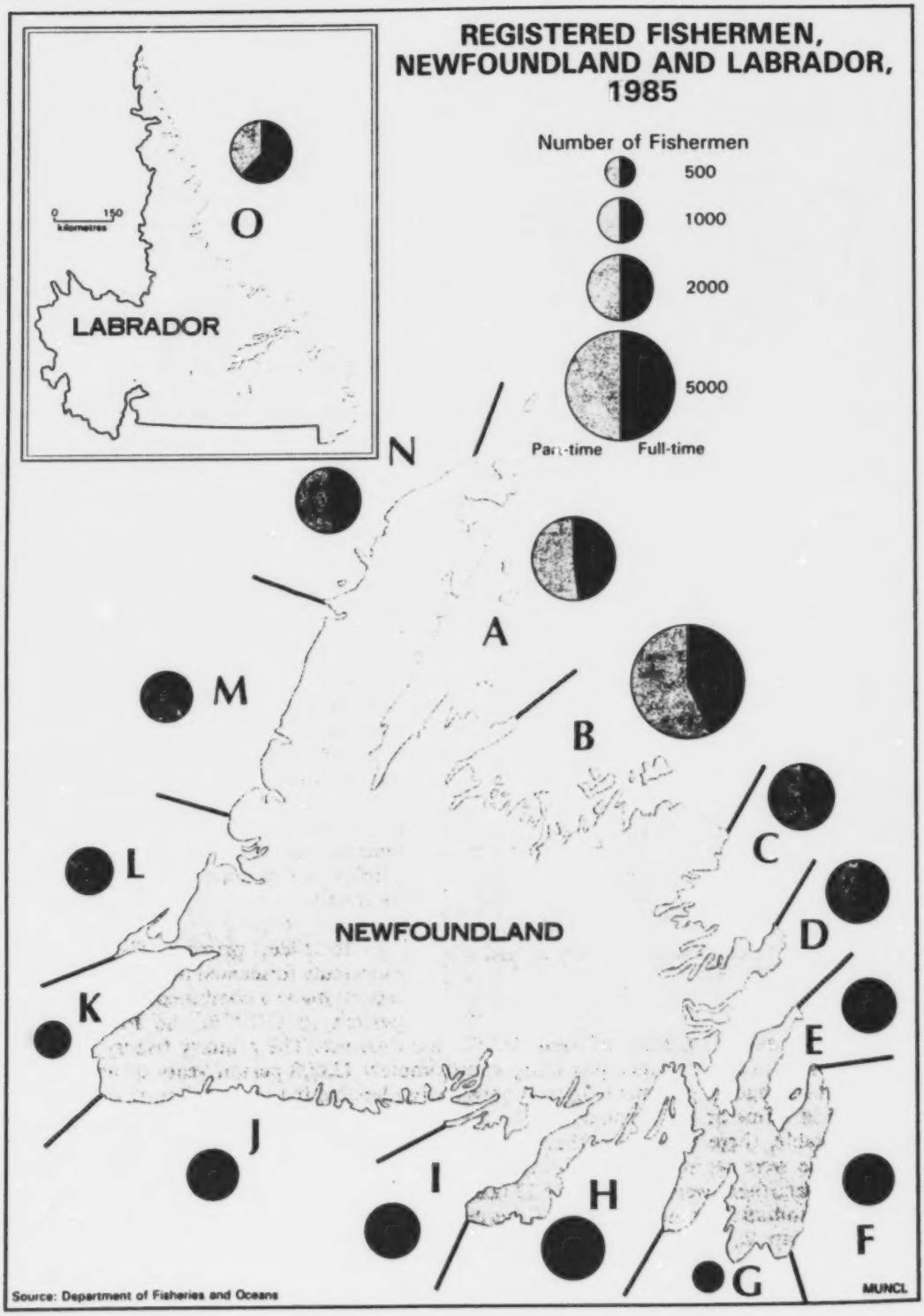
Diagram V.3.2


INDUSTRY OUTPUT BASED ON
THE GROSS VALUE OF PRODUCTION
NEWFOUNDLAND, 1984
FISH PRODUCTS (20.1%)
MANUFACTURING (20.6%)
AGRICULTURE (1.6%)
FOREST PRODUCTS (13.6%)
MINING (43.7%)
NOTE: MANUFACTURING EXCLUDES FISH PRODUCTS, PULP & PAPER, AND LUMBER.
SOURCE: STATISTICS CANADA CATALOGUE 21-603, 26-202, 31-201, 36-204, FISHERIES AND OCEANS CANADA

The prominence of the fishery in earlier years is demonstrated in Diagram V.3.1. In 1884, the most important fish product was salt cured fish and the fishing industry accounted for 66.5 percent of the Dominion's economy.

Since the turn of the century, the development and creation of new industries led to economic diversification in the Province. Early in the 1900s pulp and paper production began, expanding both the forestry and manufacturing industries. The extraction of iron ore and the discovery of other minerals increased the importance of the mining industry. As these industries expanded and the economic base of the economy grew, the relative size of the fishery declined. In 1984, 100 years later, the fishery accounted for 20.1 percent of a much larger and much more well-developed economy. Diagrams V.3.1 and V.3.2 compare the output of the primary resource industries in 1884 and 1984 and reflect the structural shifts which have occurred within the resource industries of the economy. Although the relative size of the fishery has diminished with time, the fishing industry remains one of the principal generators of employment and incomes, both directly and indirectly.

In 1986, primary fishing and fish processing (discussed in Section V.4.2 of this report) made a combined contribution of 19 percent to GDP in the Province's goods producing sector and 6.7 percent of total GDP in the Province. The primary fishery is one of the largest employers in the Province providing approximately 13,000 person years of employment in 1986. Annual average employment figures, however, understate the importance of this industry to the Province in terms of the number of jobs it supports. In 1985, the most recent year for which data are available, there were more than 26,000 registered fishermen in the Province. More than 13,000 of these were registered as full-time fishermen; approximately 1,600 were offshore fishermen. In addition, there were in excess of 13,000 registered part-time fishermen who derived a portion of their annual income from the fisheries. The spatial distribution of these fishermen is illustrated in Map V.3.1. When primary fishing and fish products manufacturing are considered together, the fishing industry accounted for more than 45 percent of annual average employment in the goods producing sector in 1987 and a significantly greater percentage of jobs. (The limitations of annual average employment statistics are discussed in Section VII of this report).

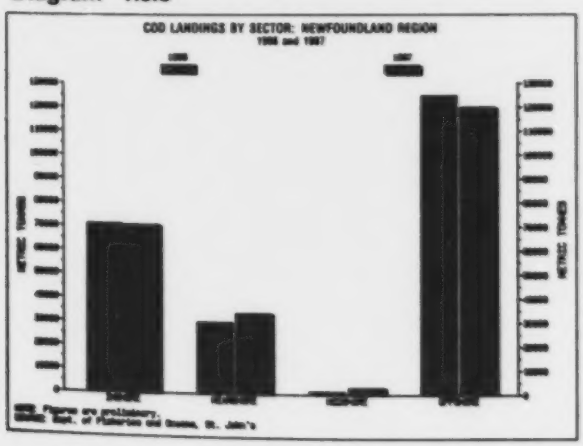

REGISTERED FISHERMEN, NEWFOUNDLAND AND LABRADOR, 1985
Number of Fishermen
500
1000
2000
5000
Part-time
Full-time
0
150
kilometres
LABRADOR
O
N
A
B
C
D
E
F
G
H
I
J
K
L
M
NEWFOUNDLAND
Source: Department of Fisheries and Oceans
MUNCL

Approximately 700 communities in Newfoundland and Labrador depend, to some extent, on the fishery. For the most part, inshore fishermen provide fish to seasonally operated inshore plants whereas the offshore trawler fleets supply integrated fish companies with raw material on a year round basis. The inshore harvesting patterns largely reflect the migration behaviour of codfish which come inshore to feed on capelin and other fish species during the summer and move offshore during the fall. This is especially true of the larger Northern Cod Stock and the St. Pierre Bank Cod Stock. Of increasing importance to the fishing industry in the Province is the recent expansion of the Resource Short Plant Program and a Provincial middle distance harvesting fleet. Fish supplied by these programs will enable some seasonal processors to operate for longer periods throughout the year.

In 1985, the most recent year for which complete data by statistical area are available, there were in excess of 14,300 vessels of 0-34 feet in length, the majority being in the 17-21 foot category and used primarily by fishermen operating near the coastline. In addition, there were over 1,300 vessels of 35-64 feet in length which operate primarily in the nearshore. Also, there were nine vessels of 65-99 feet in length and these would have the capability to operate in the midshore fishery. In 1985, there were 89 vessels of 100 feet and greater in length registered in the Province. The spatial distribution of these vessels is illustrated in Map V.3.2. In 1987, the Province's two largest fish companies, Fishery Products International Limited and National Sea Products Limited operated 72 licensed vessels of 100 feet and greater in length. These companies own and operate both processing and harvesting capabilities and most of the fish processed by these two companies is supplied by the offshore sector. Both firms, however, also own processing plants which are supplied by the inshore, nearshore and midshore sectors; the bulk would be supplied by the inshore fishery.

The fishing areas around the coast of the Province are divided into fifteen 'Statistical' areas and these are indicated by uppercase letters on Map V.3.2. The spatial distribution and concentration of fish landings in the Province are illustrated in Table V.3.1 in the most recent year for which these data are available. As the table demonstrates, groundfish landings, as a percentage of total landings, are heavily concentrated in Trinity Bay, the Eastern Avalon, Placentia Bay and the Southwest portion of the Island. Pelagic and estuarial species such as capelin and mackerel are concentrated along the Northeast Coast, Trinity and Conception Bays in particular, and the Southwest portion of the Island. Landings of molluscs and crustaceans, such as shrimp and crab, are heavily concentrated along the Northeast and Northwest Coast of the Island, Placentia Bay and the Coast of Labrador.

Diagram V.3.3



As Diagram V.3.3 demonstrates, in 1987 landings of cod were down in the offshore sector due to a reduced quota, however, an improved nearshore and midshore fishery resulted in a slight improvement in total cod landings. Total groundfish landings were down slightly, due primarily to reduced haddock and redfish landings. While the total volume of fish landings was down slightly, strong prices during 1987 increased the total value of fish landings by approximately 36 percent and this is summarized in Table V.3.2.

Both the volume and value of pelagic species landings declined in 1987. This was due primarily to a weaker market for capelin during 1987. Mackerel landings were also down slightly from 1986. An improved herring catch, however, and stronger herring prices helped to offset losses for other pelagic species.

MAP V.3.2

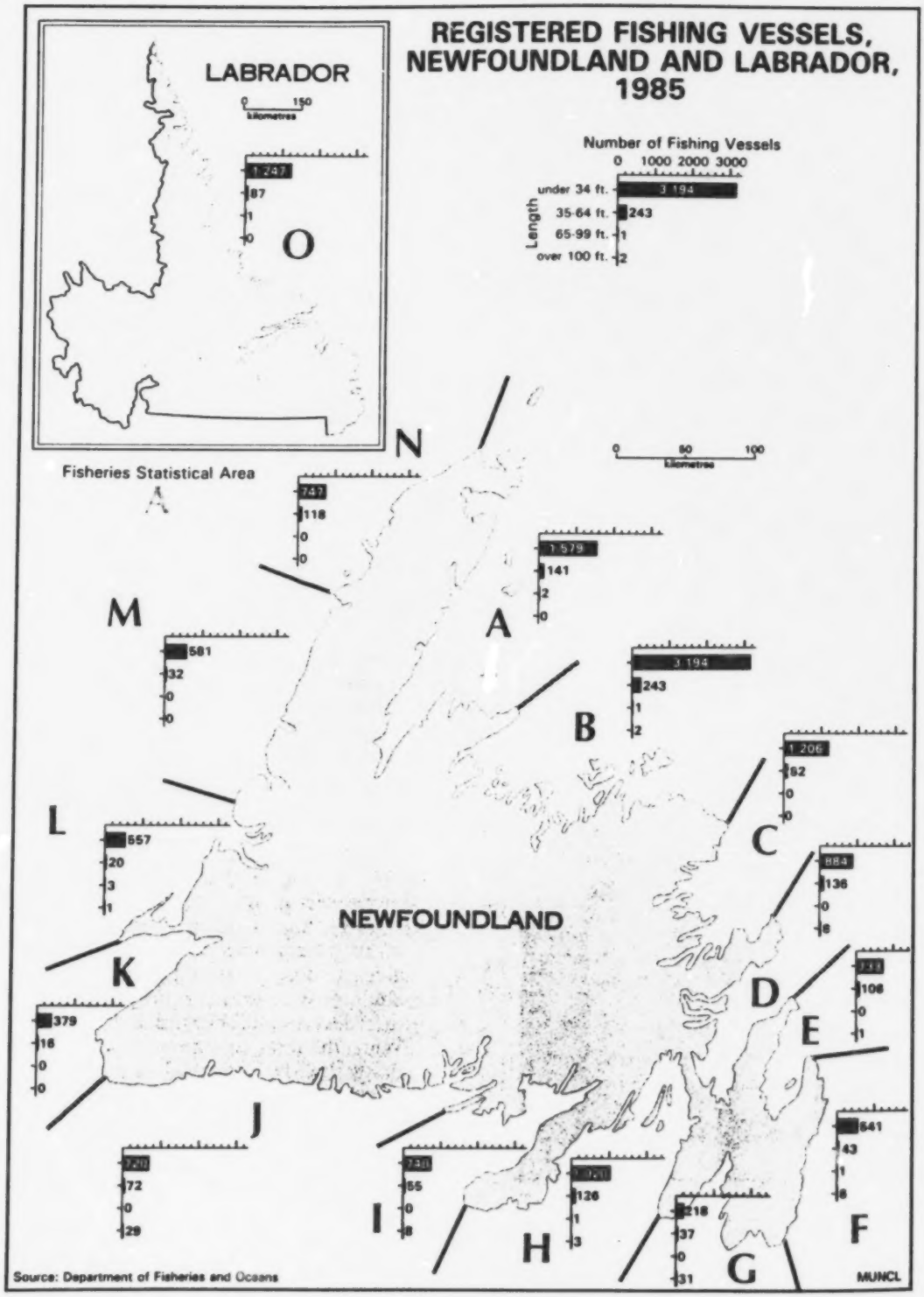

REGISTERED FISHING VESSELS, NEWFOUNDLAND AND LABRADOR, 1985
LABRADOR
0 150
Kilometres
1 247
87
1
0
O
Number of Fishing Vessels
0 1000 2000 3000
Length
under 34 ft.
35-64 ft.
65-99 ft.
over 100 ft.
3 194
243
1
2
0 50 100
Kilometres
Fisheries Statistical Area
N
747
118
0
0
1 579
141
2
0
A
M
581
32
0
0
3 194
243
1
2
B
1 206
82
0
0
C
L
557
20
3
1
884
136
0
6
NEWFOUNDLAND
K
379
16
0
0
D
E
108
0
1
J
641
43
1
6
720
72
0
29
I
H
218
37
0
31
G
F
Source: Department of Fisheries and Oceans
MUNCL

Table V.3.1

FISH LANDINGS BY SPECIES AND AREA NEWFOUNDLAND & LABRADOR: 1985p (metric tonnes - round weight)

Area	Groundfish	Percent of Total Groundfish Landings	Pelagic	Percent of Total Pelagic Landings	Molluscs and Crustaceans	Percent of Total Molluscs and Crustaceans Landings
A	23,525	6.1	9,383	14.8	4,320	24.2
B	21,548	5.6	9,003	14.3	2,919	16.3
C	9,795	2.5	5,330	8.4	1,329	7.4
D	47,959	12.4	12,643	19.9	183	1.0
E	16,152	4.2	11,538	18.2	366	2.0
F	41,183	10.7	481	0.8	643	3.6
G	22,385	5.8	1,566	2.5	646	3.7
H	58,402	15.1	780	1.2	1,181	6.6
I	40,826	10.6	129	0.2	374	2.0
J	34,178	8.8	101	0.2	36	0.2
K	29,628	7.7	1,172	1.8	324	1.8
L	3,224	0.8	9,951	15.7	477	2.7
M	6,123	1.6	387	0.6	1,015	5.7
N	15,583	4.0	280	0.4	2,774	15.6
O	15,834	4.1	633	1.0	1,290	7.2
Total	**386,345**	**100.0%**	**63,377**	**100.0%**	**17,877**	**100.0%**

Note: These figures include offshore trawler catches which are landed in these statistical areas but which may have been harvested from a different area. Figures are preliminary and subject to revisions. Totals may not add due to rounding.

Source: Department of Fisheries and Oceans, St. John's and Moncton, Newfoundland Statistics Agency and Economic Research & Analysis Division, Cabinet Secretariat.

The volume of molluscs and crustaceans increased during 1987 due to an improved shrimp fishery. The total value of molluscs and crustaceans increased due to both increased quantities and prices for shrimp and better prices for crab.

The harvest of lumpfish was very successful in Newfoundland and Labrador in 1987. The total volume of roe production increased by about 63 percent to 3,500 metric tonnes and the total landed value of lumpfish roe more than quadrupled to $13.3 million from $2.9 million in 1986.

The contribution of the Newfoundland and Labrador fishing industry to regional and national fish landings is considerable as demonstrated in Table V.3.3. In 1987, cod landed in Newfoundland and Labrador accounted for approximately 62 percent of total cod landings in the Atlantic Region and about 60 percent of total national cod landings. Furthermore, a substantial portion of all cod landed in other Canadian provinces is caught in waters surrounding the coasts of Newfoundland and Labrador. In Canada, the total landed value of all cod during 1987 was over $330 million.

Table V.3.2

REPORT OF LANDINGS AND LANDED VALUE OF COMMERCIAL SEAFISH, PROVINCE (1) JANUARY TO DECEMBER, 1986 & 1987 (Metric Tonnes - Round Weight & Value in $'000)

Species	Quantity Landed Year-to-Date		Value of Landings Year-to-Date	
	Dec/86	Dec/87	Dec/86	Dec/87
Cod	278,804	279,984	108,708	171,164
	(0.42%)		(57.5%)	
Total Groundfish	386,479	389,450	142,660	214,839
	(-0.76%)		(50.6%)	
Total Pelagic and Other Fin Fish	94,660	81,416	29,607	19,761
	(-14.0%)		(-33.3%)	
Total Molluscs & Crustaceans	16,151	19,198	31,117	41,226
	(18.9%)		(32.5%)	
GRAND TOTAL(2)	500,261	487,093	203,384	275,826
	(-2.6%)		(35.6%)	

(1) Total Provincial landings data are for cod, redfish, witch turbot, shrimp, crab, herring, capelin and lobster only. Data for other species were not available.

(2) In addition to the above, landed value to fishermen for lumpfish roe production during the period January to December 1986 and 1987 was approximately $2.9 million and $13.3 million respectively.

Note: All figures are preliminary and subject to revision.

Note: Figures in parentheses refer to percentage change from 1986

Source: Department of Fisheries and Oceans, St. John's, Newfoundland and Moncton, New Brunswick and Economic Research & Analysis Division, Cabinet Secretariat.

The majority of fish products produced in Newfoundland and Labrador are exported to the United States. The Province's main competitors in the United States groundfish market are Iceland, Denmark, Norway and the fishing industry in the United States. Table V.3.4 compares cod landings in Newfoundland and Labrador to the landings of these major competitors. As indicated in the table, landings of cod in the United States have declined in recent years. In order to meet the increasing demand for groundfish products, the United States has been importing more groundfish products from international suppliers and has also attempted to develop and market previously underutilized groundfish species.

Landings of Alaskan and Atlantic pollock, a formerly underutilized groundfish species, have been rising in the United States (see Table V.3.5) at the same time that cod landings have been declining and cod prices have been rising. The consensus among market experts is that as the price of cod fillet and block increased in recent years, buyers of fish products turned to other, cheaper substitute fish and consequently additional effort was allocated to the harvesting of pollock in the

United States. It is anticipated that if the price of cod settles below average levels achieved in 1987, United States processors will likely intensify their use of cod as a primary ingredient in processed products, causing the catch and consumption of pollock to fall.

Table V.3.3

LANDINGS OF COD IN 1987 (metric tonnes)

	Newfoundland & Labrador	Atantic Region	Canada	Nfld. & Labrador Percent of Regional Landings	Nfld. & Labrador Percent of Canadian Landings
Total Cod Landings	279,984	455,000	468,020	61.5%	59.8%

Note: All figures are preliminary
Source: Department of Fisheries and Oceans, St. John's, Moncton, Ottawa, Economic Research and Analysis Division, Cabinet Secretariat.

It is expected that during 1988 the total cod harvest in Iceland, one of the Province's major competitors in the United States market, will amount to approximately 345,000 metric tonnes, or about 10 percent less than in 1987. Such a decrease will reduce the total amount of cod available in the world market and will likely favour suppliers, such as Newfoundland and Labrador, in the important United States market.

Table V.3.4

LANDINGS OF COD, 1981-87 (metric tonnes)

	Newfoundland & Labrador	Iceland	Norway	Denmark	United States
1981	245,162	460,600	..	177,282	65,355
1982	301,594	382,200	..	175,574	79,525
1983	295,047	293,700	..	183,872	100,454
1984	275,747	281,000	276,376	195,798	96,335
1985	270,687	322,800	247,760	178,877	92,124
1986	273,433	347,748	264,639	..	75,105
1987	279,984	375,940	301,000	..	..

Note: Figures for 1985-1986 are preliminary.
Source: Department of Fisheries and Oceans, Ottawa; Iceland Yearbook of Trade and Industry, 1986; News From Iceland, January 1988; Eurofish Report, February 1988; Review of Fisheries in OECD Member Countries, 1985; United States National Marine Fisheries Service, February 1988; and Economic Research and Analysis Division, Cabinet Secretariat.

Table V.3.5

LANDINGS OF ALASKAN AND ATLANTIC POLLOCK IN THE UNITED STATES 1980-86 (metric tonnes)

	Atlantic Pollock	Alaskan Pollock	Total Pollock
1980	17,986	1,409	19,395
1981	16,934	1,741	18,675
1982	14,221	1,479	15,700
1983	13,980	1,382	15,362
1984	17,933	10,893	28,826
1985	19,721	42,108	61,829
1986	24,707	59,159	83,866

Note: All figures are preliminary.
Source: United States National Marine Fisheries Service, February, 1988 and Economic Research and Analysis Division, Cabinet Secretariat.

The capelin harvest accounted for approximately 40 percent of the total volume of pelagic species landed in the Province during 1987. Virtually all roe capelin is exported to Japan where the Province's competitors in the roe capelin market have traditionally been Iceland and Norway. The capelin harvested by Norway are usually larger in size and comparable to capelin taken in Provincial coastal waters. These larger, female capelin are preferred in the Japanese market. Female capelin harvested in Iceland are usually smaller in comparison to those caught in the Province and in Norway and hence are not as competitive in the Japanese market. Therefore, Iceland utilizes its capelin harvests primarily for industrial products such as fish meal, for production of roe, and to a lesser extent, as roe capelin. Table V.3.6 compares the amount of capelin harvested by Newfoundland and Labrador fishermen to catches taken by Norway and Iceland. Capelin catches have fallen off sharply in Norway since 1984 and it is not expected that Norway will achieve a prominent position in the roe capelin trade again until 1991 when it is forecast that Norway's capelin stocks will once again reach a harvestable level. Therefore, the extent of competition in the spring for the Japanese roe capelin market will depend on the average size and quantity of roe capelin taken in the winter capelin fishery in Iceland. It is expected that, based on past trends, demand in the Japanese market for roe capelin will be strong in 1988.

The recent signing of a $60 million, five-year, subsidiary agreement targeted for the inshore fishery improves the outlook for the Province's fishery. Expenditures under this Agreement will be directed primarily towards on the revitalization of the inshore fleet, upgrading of bait facilities, fish unloading and handling facilities, and marine service centres along with other programs designed to improve productivity and fish quality in the inshore fishery.

The total allowable catch of cod has been increased in 1988. Under the 1988 Canadian Atlantic Groundfish Management Plan, an additional 19,500 metric tonnes of cod from the Northern Cod Stock will be made available for East Coast Canadian Enterprise, the bulk of which will be captured by Newfoundland and Labrador. The Management Plan also indicates, however, that Cod Enterprise Allocation will be reduced in some other fishing areas. Therefore, the net effect will be an additional 11,915 metric tonnes of cod available for harvesting in 1988. While total enterprise allocations for all species have been revised downward slightly, an increase in enterprise utilization rates will translate into additional landings and employment in the fish processing sector.

Table V.3.6

CATCHES OF CAPELIN IN ICELAND, NORWAY AND NEWFOUNDLAND AND LABRADOR, 1984-1987 (Metric Tonnes)

	Newfoundland and Labrador	Iceland	Norway
1984	43,426	864,800	945,567
1985	35,412	993,400	640,225
1986	66,123	899,291	272,632
1987	33,066	807,461	142,600

Source: Department of Fisheries & Oceans, St. John's and Moncton; Iceland Yearbook of Trade and Industry 1986; News From Iceland, January, 1988; Eurofish Report, February, 1988; and Economic Research and Analysis Division, Cabinet Secretariat.

Fixed gear fishermen stationed along the Northeast Coast are not affected by the new Groundfish Management Plan and will maintain their allowance of 115,000 metric tonnes of cod. During 1987, these fishermen harvested about 68 percent of their allowance, which amounted to approximately 78,000 metric tonnes of cod. This compares favourably to the harvest of the previous year when 70,000 metric tonnes, or about 61 percent of the allowance was caught. It is anticipated that the landings of inshore fishermen from the Northern Cod Stock (2J+3KL) will continue to increase given the overall management plan adopted for this largest groundfish stock in Atlantic Canada.

V.4 MANUFACTURING

The Province's manufacturing industry is quite diverse and can be divided into three major components, namely, fish products, pulp and paper products, and other manufactured products. In 1986 this industry accounted for 28 percent of GDP in the goods producing sector and 9.4 percent of total GDP. The relative importance of each component of the manufacturing industry, and its respective contribution to manufacturing GDP in 1986, is outlined in the table below.

Table V.4.1

GROSS DOMESTIC PRODUCT BY COMPONENT: 1986
NEWFOUNDLAND & LABRADOR MANUFACTURING INDUSTRY

Industry	GDP ($ Millions)	Percent of Total Manufacturing
Fish Products	285	47.1
Pulp and Paper Products	120	19.8
Other Manufactured Products	200	33.1
TOTAL	605	100.0

Source: Statistics Canada Catalogue 13-213 and Newfoundland Statistics Agency.

The output of the fish products and pulp and paper products industries is linked to the Province's primary resource industries. The majority of the inputs to these production processes are provided locally and this generates substantial indirect benefits within the Province in terms of employment and incomes. Virtually all fish products and newsprint products are exported, primarily to the United States, Europe and Asia. Other manufactured products, on the other hand, are sold in both local markets and export markets. Many of the inputs required for other manufactured products must be imported from outside the Province.

Details of the 1987 performance and outlook for 1988 of each component of the manufacturing industry are provided in the following pages. In summary, the manufacturing industry recorded strong gains in 1987. The fish products industry benefited from higher average prices, particularly in the United States market, compared to the previous year. Strong gains were also recorded for pulp and paper products as a result of an increase in the price of newsprint as well as an increased level of shipments. Other types of manufacturing industries also performed well due to strength in local consumer spending and favourable international market conditions. Marystown Shipyard Limited was awarded a number of repair, refit and new construction contracts, the most notable of which was for the construction of eight fishing vessels for Fishery Products International Limited. The Come by Chance oil refinery was reactivated by Newfoundland Energy Limited and commenced production in September. Terra Nova Shoes Limited continued work on a large contract to supply safety footwear to the Canadian military and the Company announced a $4.45 million plant expansion in September.

The trend towards expansion of the manufacturing industry continued in 1987. Based on the most recent survey of investment intentions conducted by Statistics Canada, total investment in the local manufacturing industry was estimated at $233.5 million in 1987, an increase of 1.3 percent over the previous year. For the food and beverage industry, the increase in investment was even more impressive at $78 million, an increase of 83 percent over 1986.

The outlook for the manufacturing industry in 1988 is promising for several reasons. The pulp and paper products industry should experience another good year due to a newsprint price increase on January 1, 1988 and continued strong demand in international markets. The level of activity in the fish processing industry should improve this year as increased landings are expected to result from an increase in the total allowable catch. Marystown Shipyard Limited anticipates near capacity levels of activity as work continues on the Fishery Products International trawlers. The Come By Chance oil refinery is expecting a full year of production. Terra Nova Shoes Limited will proceed with the plant expansion designed to improve production technology and open up new international markets for their products. The output of other manufactured products should hold its own as local demand remains strong and strength in international markets is sustained.

V.4.1 PULP AND PAPER PRODUCTS

Production of newsprint in the pulp and paper industry accounts for about 20 percent of manufacturing GDP in the Province and generates approximately 2,400 person years of employment. With the exception of a small amount of kraft pulp, which is used as a strengthening agent and is imported from Quebec, the pulpwood requirements of the industry are met locally. Harvesting of pulpwood generates additional income and employment in the Province and results in a high value final product with a relatively significant Newfoundland content. While some of the newsprint produced by the industry is consumed within the Province, most of it is exported to markets worldwide (see Map V.4.1).

The Province's newsprint industry consists of three pulp and paper mills located in Corner Brook, Grand Falls and Stephenville. The Corner Brook mill is owned by Kruger Inc. while the other two are owned by Abitibi-Price. The Stephenville mill, formerly the Labrador Linerboard Mill, was purchased by Abitibi-Price in 1979 and converted to a single-machine newsprint mill. This mill has produced high quality newsprint since 1981, and the other two mills are now producing top quality product as a result of modernization programs which have substantially improved paper quality and productivity.

The Corner Brook mill, formerly Bowater Pulp & Paper, was purchased by Kruger Inc. late in 1984. There are five newsprint machines at this mill and the extensive modernization program underway is consistent with Kruger's history of taking older mills, revitalizing them, and turning them into profitable operations. Productivity improvements have already been realized in several areas at the Corner Brook mill, most notably in a reduced labour requirement per tonne of newsprint.

The five year Pulp and Paper Mill Modernization program, which commenced in 1985, represents an investment of about $330 million in the Province's newsprint industry (see Table V.4.1.1). The program is cost shared between the industry and both levels of government. The companies' contribution is in excess of 80 percent of the total capital cost, indicating a substantial degree of optimism concerning the future of the Province's newsprint industry. Total expenditures under the modernization program were initially budgeted at about $260 million; however, Corner Brook Pulp and Paper Ltd. announced in 1987 that they were expanding their planned capital program from $230 million to $300 million. This expenditure will see four of the five paper machines at the mill upgraded, along with substantial improvements made to the wood handling and pulping systems. The modernization program at Corner Brook will be completed by 1989/1990. The largest paper machine at the Grand Falls mill has been modernized under this program at a cost of $30.9 million; work was completed in 1987. The upgrading of the two smaller paper machines in Grand Falls was substantially completed in 1987 at a cost of about $16 million. The federal government offered $4 million of this amount under the Industrial Regional Development Program.

The mill modernization programs have already improved the quality of newsprint produced at the Corner Brook and Grand Falls mills and further improvements in quality will be realized upon completion of the program at Corner Brook. The largest paper machine, which was permanently taken out of production by Bowater in 1983, has been restarted and modernization of the machine is ongoing. As a result of these efforts, the Province's newsprint industry is well positioned to compete internationally for quality demanding markets well into the future. It is essential that the Province's industry produce the highest quality newsprint in a cost efficient manner because its product is almost entirely sold in the competitive export market, with over 98 percent of Newfoundland's shipments leaving the country in 1987.

MAP V.4.1.1

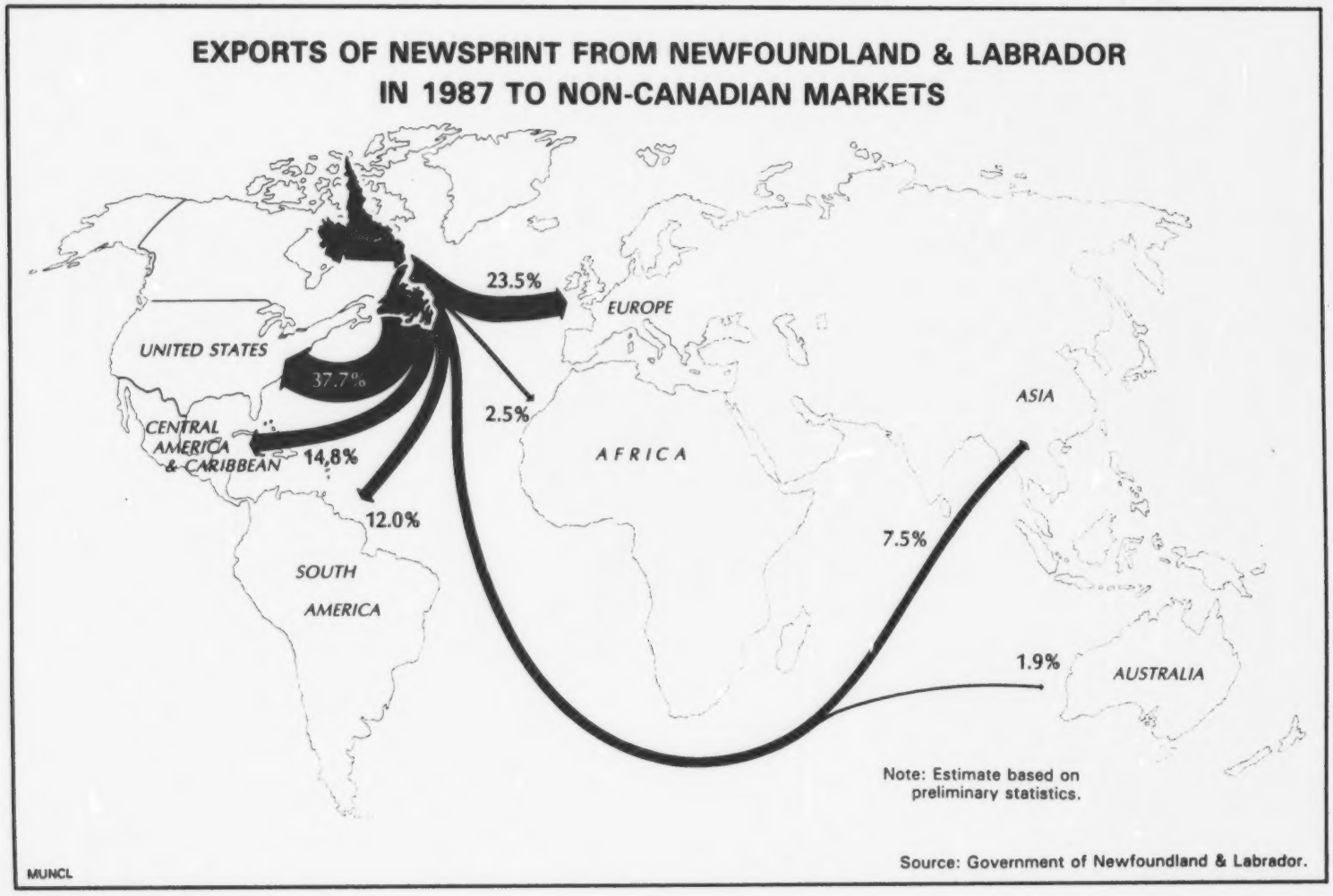

EXPORTS OF NEWSPRINT FROM NEWFOUNDLAND & LABRADOR
IN 1987 TO NON-CANADIAN MARKETS
23.5%
EUROPE
UNITED STATES
37.7%
2.5%
ASIA
CENTRAL
AMERICA
& CARIBBEAN
14.8%
AFRICA
12.0%
7.5%
SOUTH
AMERICA
1.9%
AUSTRALIA
Note: Estimate based on
preliminary statistics.
MUNCL
Source: Government of Newfoundland & Labrador.

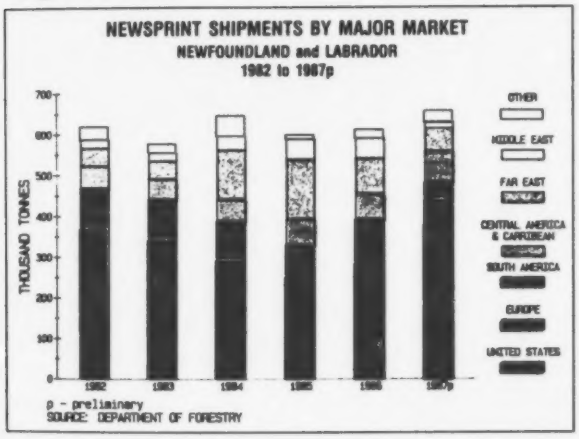
Table V.4.1.1

PULP & PAPER MILL MODERNIZATION PROGRAM

Company	Expenditures ($ millions) Total	1987e	To Date	% Completed
Corner Brook Pulp & Paper	300.0	43.7	155.8	51.9%
Abitibi-Price Grand Falls	30.9	1.0	30.9	100.0%
Total	330.9	44.7	186.7	56.4%

Note: e: Estimate
Source: Department of Development and Tourism.

Diagram V.4.1.1



Newfoundland's annual newsprint shipments by major market destination from 1982 to 1987 are outlined in Diagram V.4.1.1. The Province's industry shipped newsprint to customers in 30 countries (including Canada) in 1987, representing about seven percent of Canada's total shipments. Although the United States market is now the largest single destination for Newfoundland's shipments, a much smaller proportion of Newfoundland's total shipments enters the United States market than does Canada's. Shipments to the United States, however, have grown from 19.8 percent of Newfoundland's total shipments or 122,400 tonnes in 1982 to 33.6 percent or 221,800 tonnes in 1987. Shipments to Europe fell from 253,100 tonnes in 1982 to a low of 91,000 tonnes in 1985 and rose again to 158,900 in 1987. The European market, which was once the Province's largest, now receives 24 percent of Newfoundland's newsprint exports. The decline in shipments to Europe between 1982 and 1985 corresponded to the period when Scandinavian and other European currencies depreciated significantly against the Canadian dollar. The appreciation of these overseas currencies during the last two years, however, against both the Canadian and United States dollars, has made the Province's newsprint cheaper and more competitive vis-a-vis Scandinavian newsprint. This has greatly benefited Newfoundland's producers since it resulted in increased penetration of Newfoundland newsprint into the United States and European markets. This is a positive development for Newfoundland's industry due to both the favourable prices received and the close proximity of these markets.

Shipments to Central and South America and the Caribbean typically comprise 22 to 27 percent of Newfoundland's total newsprint exports. For the most part, these shipments are to long standing traditional customers and represent a stable source of income for the Province's industry. Shipments to the Far and Middle East have moved opposite to those into Europe during the period 1982 to 1987. These markets are less desirable in the long run as the costs of shipping the product halfway around the world are high and these markets generally have low quality requirements which are reflected in lower prices.

The Province's newsprint industry had an extremely good year in 1987 as it benefited from strong world market conditions. Even though the mill modernization program continued to constrain output in 1987 total industry production reached 671,992 tonnes, an increase of 13.3 percent over 1986. Total industry shipments increased by 8.4 percent to 665,569 tonnes, the highest level attained since 1981 and the value of shipments improved by 18.7 percent to $445.7 million as outlined in Table V.4.1.2. The increased value was attributable to improved newsprint prices, favourable currency exchange rates and the higher volume of shipments. Newsprint prices, which were raised late in 1986, were increased again in July, 1987 by US$40 per tonne to a record high US$610 per tonne. The strength of newsprint prices reflected strong growth in world demand coupled with only a slight increase in world productive capacity.

Table V.4.1.2

NEWSPRINT PRODUCTION STATISTICS
NEWFOUNDLAND & LABRADOR, 1986 & 1987

	1986r	1987p	% Change
Productive Capacity (tonnes)	769,000	728,000	-5.3
Newsprint:			
Production (tonnes)	593,182	671,992	13.3
Shipments (tonnes)	613,139	665,569	8.4
Value of Shipments (millions)	$375.4	$445.7	18.7

Notes: r: revised; p: preliminary.

Source:Canadian Pulp & Paper Association; Department of Forestry.

The Corner Brook mill operated at the maximum level which was possible while undertaking their modernization program. The Abitibi-Price mill in Grand Falls improved on its 1986 performance as mill modernization work was substantially completed. The Abitibi-Price mill in Stephenville did not produce or ship as much as in the previous year as the mill produced a variety of new grades of newsprint in an attempt to diversify future markets; some grades required different machine speeds which adversely affected output volume.

Prospects for the Province's newsprint industry in 1988 are bright as it is expected that international markets will continue to favour producers throughout the year. The new world productive capacity slated to come on stream during 1988 will have little effect on supply until 1989, while the Canadian Pulp and Paper Association expects newsprint demand to grow during the year by about two percent, spurred by the Olympic Games and a United States presidential election. Product prices were raised on January 1, 1988 by US$40 per tonne and now stand at US$650 per tonne. Based on continued strong market conditions, industry analysts expect further increases sometime in the second half of 1988. Should the Canadian dollar maintain its position against European currencies, then further inroads into the European market may be forthcoming as demand for Canadian paper continues to strengthen. Of some concern is the appreciation of the Canadian dollar against the United States dollar in the latter part of 1987 and early 1988. The negative impact of this appreciation on profit margins in the Canadian newsprint industry, however, should be offset by the increase in newsprint prices.

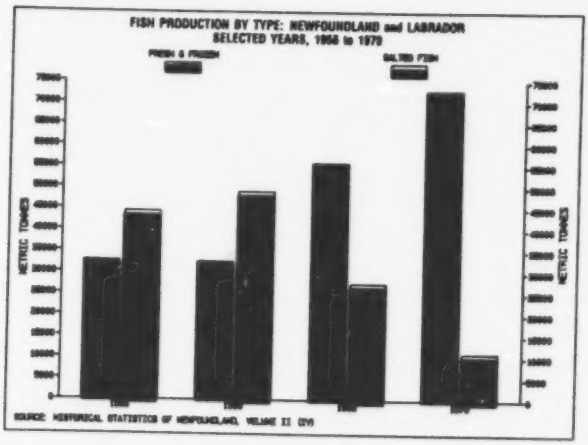
The Province's industry is well positioned to take advantage of the anticipated strong market conditions in 1988. Industry output should remain stable, although the value of shipments should improve given an increase in average prices over 1987. Employment should also remain stable throughout 1988. The Stephenville mill should have a full year of production and shipments will probably rebound to 1986 levels. The Grand Falls mill will experience a full year of production un-

constrained by mill modernization activities and shipments should at least equal and perhaps exceed 1987 levels. Output will continue to be constrained at the Corner Brook mill as the modernization program proceeds. This mill's shipments may equal or fall slightly below 1987 levels, although the company will probably wish to minimize downtime related to modernization in light of the anticipated strong world market conditions.

Prospects for any further expansion of the pulp and paper industry lie in the development of the Labrador forest resources as total timber demand on the Island is approaching the upper limit that the forests can sustain. There has been continued interest expressed in establishing a forest products processing facility in Labrador and the Province will further efforts to develop this resource in 1988. The forest in the Happy Valley/Goose Bay area is one of the last continuous blocks of unexploited, high quality black spruce forests available anywhere in the world. As black spruce is a preferred input to newsprint production, development could occur in the near future.

V.4.2 FISH PRODUCTS

Diagram V.4.2.1



The fish processing industry in Newfoundland and Labrador has undergone a period of extensive restructuring since the late 1930s. Throughout the history of the Province, fish has been harvested and exported to markets around the world and for hundreds of years, until the 1950s, the main export of the fishing industry was salted cod. This began to change in the late 1930s and early 1940s, however, when increasing per-capita consumption of fresh fish and fresh fish products in the United States in addition to the increasing availability of freezing facilities and equipment during the war years encouraged the development of the fresh fish processing industry. By 1970, as illustrated in Diagram V.4.2.1, the output of the industry had shifted from the production of salted cod to the production of fresh and frozen fish products.

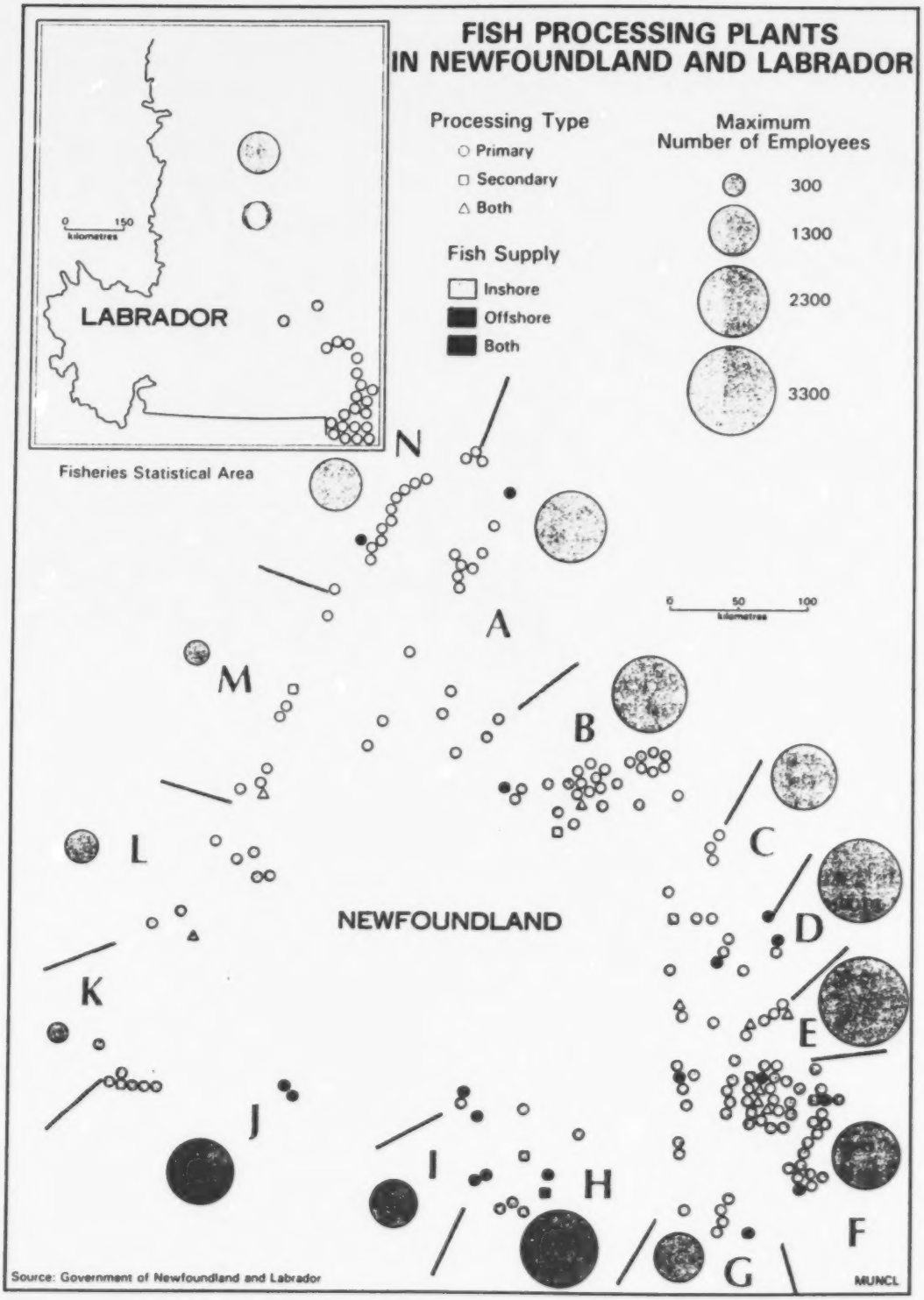
The fish products manufacturing industry accounted for approximately 13.2 percent of GDP in the Province's goods producing sector in 1986 and 4.7 percent of total GDP. The total value of seafood production in the Province during 1987 was about $790 million compared with $720 million in 1986. Approximately 95 percent of all seafood produced is exported.

Fish processing provided nearly 10,000 person years of employment in 1987. While this is a slight improvement over 1986 levels of employment, it is not a good indication of the number of jobs in the Province supported by the fish processing industry. For example, approximately 26,000 people were listed on the payroll of fish processing plants in Newfoundland and Labrador during 1986. While many of these people would not have been employed for a full year, it is nevertheless indicative of the extent to which people rely on the fish processing industry for employment and incomes. (The limitations of annual average employment statistics are discussed in Section VII of this report.)

In 1986 there were 201 registered processing plants active in Newfoundland and Labrador which provided employment to approximately 173 communities. The bulk of these 201 plants (approximately 182) are supplied with raw material by the inshore fishery and, to a smaller extent, by the nearshore and midshore fishery. Of the remaining plants, twelve are supplied almost exclusively by the offshore fleets while seven depend on fish supplied by both the offshore and the inshore fishery.

Not all of these plants are individually owned and operated. In 1986, 25 different companies collectively operated approximately 110 plants or 55 percent of all facilities in operation. The spatial distribution of fish processing facilities in the Province and employment in fish processing is illustrated in Map V.4.2.1. As illustrated in the map, processing facilities, and consequently much of the employment related to fish processing, are heavily concentrated along the South and Northeast Coast of the Island and Southern Labrador.

MAP V.4.2.1


FISH PROCESSING PLANTS
IN NEWFOUNDLAND AND LABRADOR
Processing Type
Primary
Secondary
Both
Fish Supply
Inshore
Offshore
Both
Maximum
Number of Employees
300
1300
2300
3300
LABRADOR
0 150
kilometres
Fisheries Statistical Area
NEWFOUNDLAND
0 50 100
kilometres
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
Source: Government of Newfoundland and Labrador
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The two largest fish companies in the Province, Fishery Products International Limited, and National Sea Products Limited, own and operate both processing and harvesting facilities. Both of these companies reported an excellent year in 1987.

Fishery Products International (FPI) operates sixteen processing plants in Newfoundland and Labrador, buys fish directly from approximately 2,500 fishermen and employs nearly 8,000 people. The company reported income before extraordinary items of $31.0 million which was well above the $22.3 million reported during 1986. The success of the company during the past two years is of particular significance given that the company lost $35 million during the previous two years. The company sets aside 10 percent of their pre-tax profits for the benefit of employees through a profit sharing arrangement.

The corporate objectives of FPI are reflected in its investment program. A capital expenditure program of $50.0 million is planned for 1988, an increase of 52 percent from $32.9 million invested in 1987. The company is continuing to upgrade its trawler fleet and processing facilities with a view to increasing productivity, diversifying product lines and increasing market shares in both domestic and international markets.

The efforts of FPI to develop new international seafood markets have met with success. In the important United States market, FPI was voted the number one frozen fish and seafood supplier in a nation wide poll of distributor sales representatives for the second consecutive year, a significant accomplishment since this distinction had been held by Scandinavian companies for more than a decade. The company has also announced an accord with a leading Japanese seafood company to distribute eleven new seafood products in the Japanese market beginning in 1988. The products were developed, and will be produced, mainly at FPI's secondary processing plant located in Burin.

National Sea Products is also a significant contributor to fisheries activity in Newfoundland and Labrador. The company employs 2,000 plant workers and trawlermen in the Province and also purchases fish directly from between 1,000 and 1,500 fishermen. During 1987, the company reported income before extraordinary items of $27.6 million compared to $21.8 million reported during 1986. National Sea is also striving to diversify its product lines and improve its position in the marketplace. This will enhance the competitiveness of the firm in the future.

The saltfish trade is an important source of income for many individual fishermen and plant workers. The marketing and distribution of this product to consuming countries is handled solely by the Canadian Saltfish Corporation. The Corporation recorded a profitable year in 1987, however, profits were lower than levels reported for 1986 as a result of higher prices paid to fishermen last year. The main destinations for the Province's saltfish products continue to be countries located in the Caribbean, Europe and, to a lesser extent, Africa.

The Province's fish processing industry produces a wide variety of products as demonstrated in Table V.4.2.1, however, frozen blocks, sticks and fillets accounted for 61 percent of the total value of fish production in 1984, the most recent year for which complete data were available.

Table V.4.2.1

VALUE OF FISH PRODUCTS BY TYPE NEWFOUNDLAND AND LABRADOR, 1984 (Value in $'000)

Type of Product	Value	Percent of Total(1)
Frozen Fillets	194,122	43.2
Frozen Blocks & Sticks	80,753	18.0
Frozen, Round or Dressed	35,593	7.9
Shucked Fresh & Frozen	26,761	5.9
In Shell Fresh & Frozen	25,040	5.6
Dried Salted	21,898	4.9
Fresh Fillets	16,992	3.8
Meal	12,028	2.6
Other Products	10,013	2.2
Fresh, Round or Dressed	9,048	2.0
Pickled & Vinegar Cured Fillets	5,030	1.1
Green Salted or (Wet Salted)	4,908	1.1
Smoked, Round or Dressed	493	0.1
Smoked Fillets	399	0.1
Oil	385	0.1
Pickled & Vinegar Cured Dressed	2,156	0.5
Canned	2,132	0.5
Bait	2,042	0.5
Boneless Salted	-	-
Other Pickled & Cured	-	-
Total Value of Fish Products	449,793	100.0

(1) Components may not add to 100 percent due to independent rounding.
Source: Department of Fisheries & Oceans, St. John's and Newfoundland Statistics Agency and Economic Research and Analysis Division, Cabinet Secretariat.

Production of frozen groundfish fillet, block and other products in the Province was 108,661 metric tonnes in 1987, an increase of approximately 2.5 percent over 1986 levels. Table V.4.2.2 summarizes groundfish production by product type for both years.

The Newfoundland and Labrador fish processing industry accounts for the majority of groundfish fillet and block products produced in Canada. The total amount of groundfish fillet and block produced in Canada during 1986 was 170,955 metric tonnes, 60.2 percent of which was produced in Newfoundland and Labrador.

Table V.4.2.2

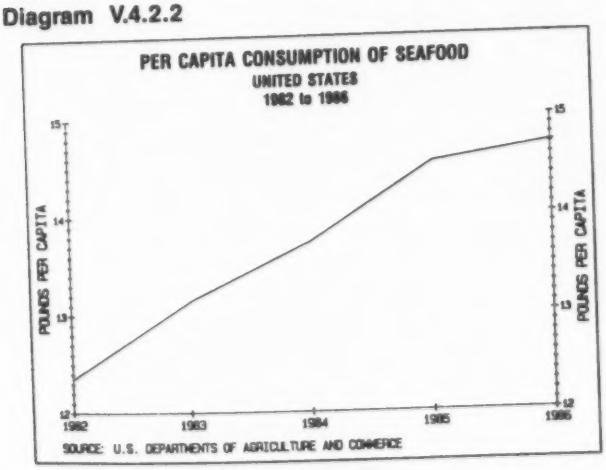
PRODUCTION OF FROZEN GROUNDFISH PRODUCTS, NEWFOUNDLAND AND LABRADOR, 1986 AND 1987 (Weight in Metric Tonnes)

Product	1986	1987
Groundfish Fillets	59,105	61,492
Groundfish Blocks	37,674	36,828
Other Groundfish Products	9,210	10,341
Total	105,989	108,661

Source: Department of Fisheries and Oceans, St. John's and Moncton, and Economic Research and Analysis Division, Cabinet Secretariat.

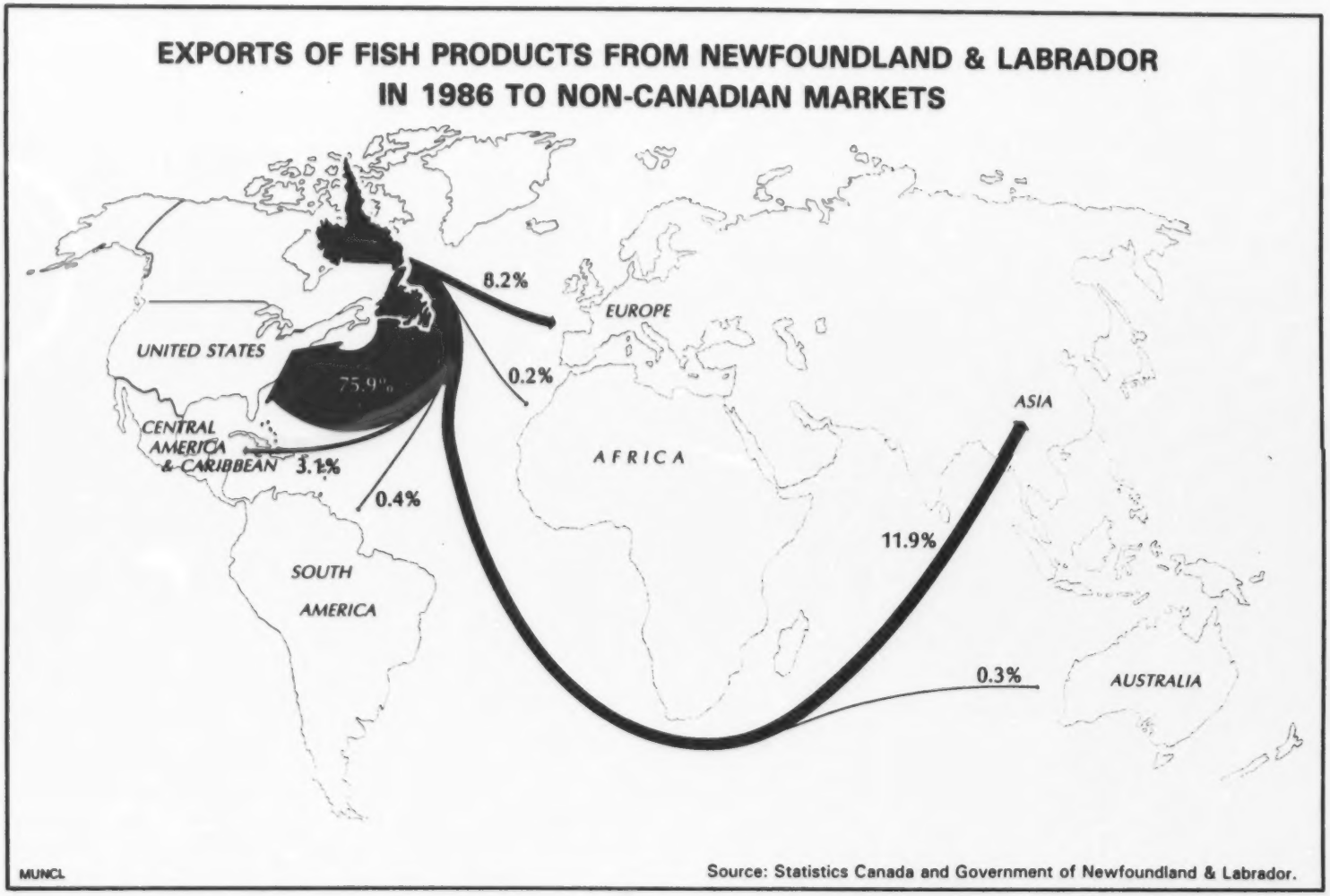
The Province is linked to international markets through its exports of seafood products. Map V.4.2.2 illustrates the distribution of seafood exports to non-Canadian markets in 1986 and demonstrates the importance of the United States market to fish processors in the Province. Sales to the United States accounted for 75.9 percent of the total. Markets in Asia, mainly in Japan, accounted for a further 11.9 percent of the Province's total seafood exports in 1986. While markets other than the United States and Asia were relatively small (12.2 percent of total value) they accounted for almost 19 percent of the total volume of seafood exports.

Diagram V.4.2.2



The United States is second only to Japan as the largest importer of fish products in the world. In 1986, United States imports of fish products were approximately 1,351,210 metric tonnes, an increase of about eight percent from the previous year. The United States is also a major exporter of processed fish products and in 1986, the increased demand for fish products was due to both an increase in domestic consumption and an increase in exports. United States domestic consumption of seafood reached its highest level ever in 1986, 14.7 pounds per capita, as illustrated in Diagram V.4.2.2. Exports of fish products from the United States also rose considerably to a level of 333,402 metric tonnes, about 13.4 percent higher than in 1985.

MAP V.4.2.2


EXPORTS OF FISH PRODUCTS FROM NEWFOUNDLAND & LABRADOR
IN 1986 TO NON-CANADIAN MARKETS
8.2%
EUROPE
UNITED STATES
75.9%
0.2%
ASIA
CENTRAL
AMERICA
& CARIBBEAN
3.1%
AFRICA
0.4%
11.9%
SOUTH
AMERICA
0.3%
AUSTRALIA
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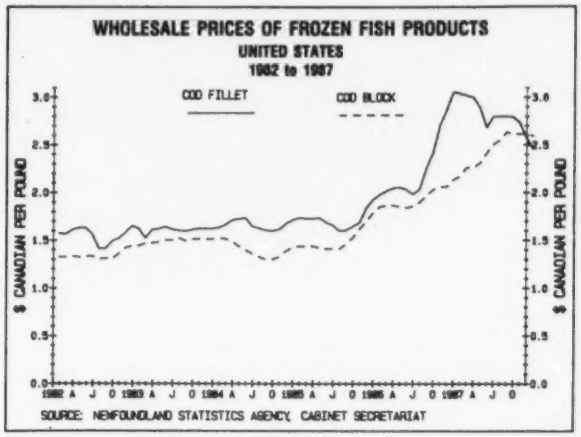
Source: Statistics Canada and Government of Newfoundland & Labrador.

Diagram V.4.2.3



The steady rise in the consumption level of seafood was accompanied by a rapid depletion of groundfish inventories in the United States during the latter half of 1986 and early 1987. As Diagram V.4.2.3 illustrates, cod fillet prices peaked in November of 1986 at Cdn. $3.08 per pound, however, prices of cod block continued to strengthen during 1987 and peaked in August at Cdn. $2.65 per pound. The Province's fishing industry benefited from higher annual average prices during 1987. Cod fillet prices were higher by about 9.7 percent compared to 1986 while cod block prices were about 15.9 percent higher.

In response to the declining trend in cod fillet prices and continued strengthening in cod block prices, monthly production data would indicate that the production mix of block and fillet product was adjusted during 1987 to suit market requirements.

The outlook for the fish processing industry is one of moderate growth during 1988. Fish prices in the United States are expected to remain fairly stable in the short term while capelin prices are forecast to be higher than those received during 1987. The increased total allowable catch for cod in 1988 and higher enterprise utilization rates should translate into a higher volume of fish landings and consequently increased raw material for fish processors in the Province.

V.4.3 OTHER MANUFACTURED PRODUCTS

The manufacture of products other than fish and newsprint accounted for 33.1 percent of total Gross Domestic Product in the Provinces's manufacturing industry during 1986 and 3.4 percent of total GDP. In 1987, annual average employment in this component of the manufacturing industry was estimated at 5,000 person years, an increase from 4,500 in 1986. Due to the seasonal nature of some manufacturing activities, however, the number of jobs supported by these manufacturers is understated by annual average employment statistics.

Table V.4.3.1 below highlights some of the key manufacturing industries in the Province while Map V.4.3.1 highlights the geographical location of these manufacturers throughout the Province. Although many of the products manufactured are consumed within the Province, certain products are exported to national and international markets. Some of these manufacturing industries offer significant potential for future economic growth, particularly in relation to the development and production of offshore oil and gas.

Table V.4.3.1

SELECTED INDUSTRIES IN OTHER MANUFACTURING
NEWFOUNDLAND & LABRADOR, 1987

Fabricated Metal Products

- Fabricated & Structural Metal
- Boilers & Heat Exchangers
- Ornamental & Architectural Metal Products
- Machine Shop Industry

Wood Industries

- Sawmills, Planning & Shingle
- Sash, Door and Other Millwork
- Furniture and Fixtures
- Veneer and Plywoods

Transportation Equipment Industries

- Shipbuilding & Repair
- Boatbuilding & Repair

Chemical and Chemical Products

- Industrial Inorganic Chemical Industries
- Paint and Varnish (Coatings) Industry

Food & Beverage Industries

- Meat & Poultry Products
- Dairy Products
- Bakery Products
- Soft Drinks
- Breweries

Non-Metallic Mineral Products

- Cement
- Ready Mix Concrete

Leather & Allied Products

- Footwear Industry
- Furriers

Textile Products

- Clothing

Refined Petroleum & Coal Products

Source: Standard Industrial Classification (1980) and Economic Research and Analysis Division, Cabinet Secretariat.

Fabricated Metal Products

There are approximately 40 firms in the Province engaged in the fabrication and erection of steel and metal products, casting of ferrous and non-ferrous metals and the machining of steel and special products. These firms are located throughout the Province with a concentration in St. John's. Several of these firms provide only metal fabrication or machining services that are incidental to their main industrial activity. For example, Marystown Shipyard Limited fabricates steel for use in new vessel construction and Corner Brook Pulp & Paper Ltd. machines parts to repair production equipment.

MAP V.4.3.1

Source: Government of Newfoundland and Labrador

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The metal and steel fabrication and erection industry provides structural steel fabrication and erection to the construction industry and manufactures and distributes products for local use including tanks, pressure vessels and heat exchangers. The largest company in this industry had been Easteel Industries (1984) Limited which went into receivership on February 5, 1988 following a lengthy strike by unionized plant workers. The industry has not, however, lost its ability to handle any project as a result of the Easteel closure. The largest firm now in operation, located in St. John's, recently carried out a $1.75 million expansion which saw the plant size almost triple and the labour force increase from 40 to 65 persons.

A state of the art foundry began production in 1988. The facility will employ between 30 and 40 persons and will cast a variety of products such as manhole covers, grates and items for the fishing industry. The products will be sold in both domestic and export markets.

The Province also has the capability to manufacture machined steel products ranging from refinished engine blocks to high technology moving parts for jet engines. As a result of the implementation of a rigorous quality control program and the acquisition of four computerized CNC machines, one company in the Province has been awarded contracts with Pratt and Witney, General Electric and Hermes for production of high technology items made from materials such as titanium and other special metals. These items are produced for export to Eastern and Central Canada.

In addition to potential contracts from the development of the Province's offshore petroleum resources, the metal fabrication and machining industry in this Province stands on the brink of accessing a rapidly expanding market for existing and new products in the aerospace and defence industries. In 1987 the Federal Government announced its intention to spend $200 billion over 15 years to upgrade Canada's defence capabilities. The Government will acquire new ships, submarines, tanks, helicopters, jet aircraft, ground vehicles and weapons along with a variety of associated hardware such as clothing and boots. The Federal Government is committed to maximizing the Canadian content in all acquisitions. In order to access as much of this potential business as possible, a group of eight local businesses have recently formed the Newfoundland Aerospace and Defence Associates. This group, in part through assistance from the Province, will lobby industry and government in Central Canada to promote this Province's capabilities in the area of high technology manufacturing and engineering. The recent breakthrough into the high technology products market by local manufacturers through Pratt and Witney and other contracts demonstrates that this capability exists in the Province and offers promise for the future of a dynamic new high technology industry for Newfoundland and Labrador.

Wood Industries

This industry group consists of a large number of firms engaged in the manufacture of pulp and paper, lumber and a variety of other wood products. The export oriented pulp and paper industry, which is the subject of Section V.4.1 of this report, is the largest single contributor to this industry group. The other firms in this industry group primarily serve domestic markets and make an important contribution to the local economy.

The largest component is the sawmill industry which produced 45.5 million board feet of lumber during 1986/87, an increase of 2.6 percent from 1985/86. Preliminary estimates indicate that production increased by a further 5.5 percent to 48 million board feet in 1987/88. Although there were 2,057 licensed sawmills in the Province, only five mills had annual production in excess of 500,000 board feet of lumber each annually while the majority produced less than 50,000 board feet. Many of the sawmills are one-person outfits which operate for only short periods during the year. As such, sawmilling is often referred to as a 'cottage industry' in Newfoundland and Labrador.

There are sawmills located throughout the Province with the largest concentrations of commercial operators on the Bonavista Peninsula, and in the central region of the Island from Gambo to Springdale. The industry produces lumber for local markets in the form of small dimension

building materials including 2x3 and 2x4 studs. Sawmill production typically meets about 40 percent of total Provincial lumber requirements.

Prospects for the sawmilling industry are again positive for 1988/89 particularly as the recently established Provincial lumber grading service has ensured that locally produced lumber meets the same quality standards as imported lumber. Improved quality standards should be reflected in lumber prices and has already resulted in increased acceptance of domestically produced lumber in local markets. Lumber demand is expected to remain strong in 1988 as activity in the Province's residential construction industry is forecast to increase. Specialty lumber such as kiln dried white birch from Central Newfoundland has been used successfully by local furniture makers and this represents a new product line for a few Provincial sawmills.

A United States countervail action in 1986 resulted in the imposition of a 15 percent export tariff on Canadian lumber destined for the United States. Since the Province does not export lumber to the United States, domestic producers have not been directly affected by this action. In addition, the feared 'dumping' of mainland produced lumber into the Newfoundland market did not materialize in 1987 due to strong demand for lumber in Central Canada. In 1988, however, there is a possibility of 'dumping' since residential construction is expected to decline in Canada and the United States.

The remainder of this industry encompasses many firms located throughout Newfoundland and Labrador that are engaged in the manufacture of wood products other than lumber such as wooden crates, doors, pallets, windows, cabinets, floor and roof trusses, veneered plywood, as well as pressure treated timber and lumber and other general millwork.

Two of the largest firms in this industry are located in Mount Pearl and Clarenville. The operation at Mount Pearl usually employs 60 people, however, employment increases to 75 in periods of peak production. Products manufactured at this plant include wooden windows, doors, cabinets, other furniture, hardwood plywood and custom millwork. The operation at Clarenville usually employs 50 people but this is increased to 65 persons during the peak production period. Its products include treated and untreated timber and lumber, and treated and untreated utility poles.

The location of these two plants and other firms engaged in the production of wood products are indicated on Map V.4.3.1. As the map suggests, this industry is widely distributed providing employment and incomes for many people in both rural and urban areas of the Province.

Transportation Equipment Industries

The shipbuilding and repair industry (as distinct from the boatbuilding industry) presently consists of two shipyards engaged in new vessel construction and ship repair, and another three companies engaged in repair work only. The industry supports about 1,000 jobs, some of which are seasonal. Shipbuilding involves the construction of steel ships while the repair yards work on a variety of vessels ranging from fishing trawlers to offshore oil and gas drilling rigs.

The largest shipyard in the Province is Marystown Shipyard Limited located on the Burin Peninsula. This shipyard has the latest in technology and constructs vessels of up to 200 feet in length. To date, some 40 new vessels have been constructed at the Yard including fishing trawlers, small vehicle ferries, offshore supply boats, search and rescue boats and various patrol ships. Employment at the Yard varies from 400 to 650 people, depending on the workload.

The Yard was fairly active throughout 1987, although the facility operated below capacity. It was awarded a contract valued at approximately $4 million for the reconfiguration of Hull 37, a vessel sold to the Canadian Coast Guard in 1986. It delivered two middle distance trawlers to the Provincial Government by December, a contract valued at about $8 million. The Yard was also

awarded a contract to refit the Coast Guard vessel Simcoe starting in December, 1987 valued at $9.9 million. Normal levels of routine repair work for regular customers was also experienced.

The Cow Head Oil Rig Repair Facility, operated by the company, experienced low levels of activity during the year as a result of the downturn in oil and gas exploration activities off the coast of the Province. There were two contracts awarded in 1987, both for repairs to the Bow Drill 3. Prospects for the future of this facility remain tied to the level of offshore oil and gas exploration and development activity.

Prospects for new vessel construction by Marystown Shipyard in 1988 are positive. The company commenced work on the construction of six deep sea trawlers and two 'gill netters' for Fishery Products International Limited in October, 1987, valued at between $52 and $59 million. The Federal and Provincial Governments jointly provided $21 million in assistance to the Yard to offset subsidies being provided to foreign bidders by their respective governments, a factor which was instrumental in allowing the company to be successful in its bid. This project will be carried out during the next three years. As a result of new and ongoing contracts, the Yard is expected to operate at or near full employment.

Marystown Shipyard Limited, through the formation of Vinland Industries, has entered into a joint venture with Moss Rosenberg, a Norwegian company acknowledged as a world leader in the construction of offshore oil and gas production facilities. Upon release of the Hibernia project, Vinland will pursue contracts relating to module fabrication and the mechanical outfitting of the gravity-based structure. Marystown Shipyard Limited has completed a training program in which engineers, management and production personnel were trained in the construction of such systems at Moss Rosenberg's facilities in Norway. These actions will ensure that the Yard is well positioned to take advantage of offshore oil and gas development and the Fishery Products International contract will enable the company to retain these skilled personnel pending the release of the Hibernia project.

The Canada/Newfoundland Offshore Development Fund has allocated $20 million for an Offshore Fabrication Enhancement Program for Marystown Shipyard Limited in recognition of upgrading required to enable the Yard to compete for offshore steel fabrication contracts. The amount of $2 million was made available in 1987 to assist the Yard in upgrading its engineering and managerial capabilities. In addition, engineering studies will be carried out in order to identify specific areas in which physical facilities require improvement. The balance of $18 million for physical expansion and upgrading of the shipyard's facilities has been approved-in-principle pending the results of the engineering studies and a decision to proceed with the development of Hibernia.

Glovertown Shipyards Limited, formerly owned by Burry Marine Ltd., is a smaller scale shipbuilding and repair operation, specializing in fishing vessels. It operated at or near capacity throughout 1987 as contracts were plentiful; employment ranged between 35 and 60 persons. The outlook for the shipyard in 1988 is positive as it is expected that there will be plenty of work available. Employment should remain at about 50 persons during the year.

Construction began in 1987 on a new shipyard in Benoit's Cove by Gallants Marine Fisheries Limited. The company, which expects to begin operations by the summer of 1988, will produce 65 to 85 foot long steel and aluminum vessels for use in the fishing industry. The shipyard will have the capability of constructing vessels up to a length of 100 feet. Approximately $1 million will be spent on construction of the plant and when fully operational, the plant will employ over 100 persons.

The major player in the ship repair industry is the Newfoundland Dockyard. Established in 1884, the dockyard was incorporated as a subsidiary of Marine Atlantic on March 31, 1987. The Dockyard's facilities now include a graving dock and syncrolift. The syncrolift is 300 feet long and 50 feet wide and is used to raise ships out of the water so that work can be performed on up to three ships simultaneously. The Dockyard provides complete ship repair services including hull

repairs, machine shop work and sandblasting and painting. With in excess of 60 contracts during 1987, the majority of which were attained on a tendered basis, employment at the dockyard averaged 208 during the year. The Dockyard's main customer in 1987 was Supply and Services Canada, followed by Marine Atlantic, which together accounted for about 80 percent of revenues. Other customers during the year included Husky Bow Valley and National Sea Products.

Competition in the repair segment of the industry has intensified mainly due to the low level of activity in new vessel construction in Canada; this has prompted many shipbuilders to compete more vigorously for repair work. As part of the Marine Atlantic takeover, the Federal Government awarded a contract to A and P Appledor of Halifax, Nova Scotia to evaluate the Dockyard and to suggest improvements to make it more productive and cost competitive. While the report has not been made public, implementation of recommendations will be undertaken as soon as is practical.

Fishery Products International Limited (FPI) owns and operates a refit centre in the town of Burin located on the South Coast of the Province. During 1987, approximately $2.8 million was spent to continue construction on a wharf and a new facility that will enable FPI to service its fishing trawlers more efficiently. During 1988, over $2.7 million will be spent to finish construction on the wharf and equip the refit centre. Over the past three years almost $7.2 million has been spent on both projects.

Employment at the refit centre consists of 20 salaried persons and 120 hourly paid persons. In total, these 140 persons are employed on a year-round basis to service the fishing trawlers of FPI. The refit centre services trawlers which require work above the waterline. Vessels which require work below the waterline are usually referred to the Marystown Shipyard. The refit centre usually schedules between 10-12 trawlers per year for refit work, however, an additional 7-10 trawlers may be serviced during the year on an 'as required' basis. This facility provides important fleet support to FPI's deep sea trawlers.

There are two smaller scale ship repair operations, Colda Mechanical Ltd. and DF Barnes Ltd., in St. John's which provide repair services to offshore oil and gas supply vessels and marine related fisheries vessels. They jointly employ approximately 40 persons.

The Province's boatbuilding industry is smaller in scale than the shipbuilding industry and consists of a number of small firms located around the province which construct fiberglass and wooden boats. The boats vary in length from small dories to longliners of up to 65 feet in length and are primarily built for use in the inshore and nearshore fishery. Construction of pleasure craft represents only a small component of industry output. Markets for these boats are almost exclusively domestic. One such company engaged in this activity is Yates Boatbuilding Limited of Springdale. They build fiberglass boats of various sizes ranging from an 18 foot open boat to a 41 foot Cape Island style longliner. Since commencing operations in 1986, Yates has doubled in size due to increasingly strong product demand. There has been a corresponding growth in employment during the last two years and the workforce now stands at 11 full time workers.

Coatings Industry

Standard Manufacturing Company Limited, located in St. John's, is the only firm in the Province engaged in the manufacture of coatings. The company, which is Newfoundland and Labrador owned and operated, has been in business for 85 years. This company is one of few in the Province which successfully weathered the 1930s depression and survived the competition from outside companies which Confederation brought in 1949. The company has employed unionized labour for 35 years and the absence of any labour disputes during this time is evidence of the company's excellent employee-management relations.

The company's manufactured products include a variety of paints, varnishes and protective coatings for use in domestic and industrial applications and about 120 people are employed. All

manufacturing is carried on at a 48,000 square foot plant and laboratory on a three-acre site in St. John's and the products are marketed under the Matchless brand name to customers located throughout Canada. With the exception of labour, all required inputs to the production process are imported. All goods and services related to the plant facility, however, are purchased locally and include all cartons, printed labels for paint cans and plant maintenance services. The company operates two modern automated warehouse and distribution centres, one of 800,000 cubic feet located on a 35-acre site in St. John's and one of 200,000 cubic feet located in Halifax; the quality of these facilities is equal to any in the world.

Future prospects for this company are bright due to strong markets, particularly in Eastern Canada. An expansion of the company's industrial plant is being considered on the strength of these markets and also on the strength of a license which the company has obtained to manufacture and distribute DEVOE industrial product; production of DEVOE high performance marine coatings has already taken place. DEVOE is a world leader in the development of marine and industrial coatings used in offshore oil and gas production.

Industrial Inorganic Chemical Products

This industry consists of seven firms engaged in the manufacture of products such as phosphorus, compressed gases, windshield washer fluid, liquid dish detergent, soaps, waxes, and oil absorbants. These products are marketed locally, nationally and internationally. Manufacturing plants are located in St. John's, Long Harbour, Bishop's Falls and Lewisporte and provide employment for approximately 370 people.

The largest firm in the industry is Albright and Wilson Americas (formerly known as ERCO), a division of TENNECO Canada Inc. This company, located at Long Harbour, employs 300 people and manufactures phosphorus, ferro phosphorus, silica slag aggregates and coke fines which are shipped to markets around the world. The phosphorus product is converted, by chemical processing industries located mainly in the United Kingdom and Japan, into industrial and specialty phosphates which are sold primarily to the detergent and food industries. The slag aggregate is produced from a plant which crushes waste material from Albright and Wilson's phosphorus furnaces; this plant began operation in 1985. These slag aggregates are produced in five different sizes and are used for asphalt mixes and drainage systems. The product is transported in the same ships which bring phosphate rock from Florida to Albright and Wilson's plant. This reduces the cost of transporting the slag aggregate as these ships would otherwise return empty.

The required inputs for the phosphorus plant include phosphate rock, carbon electrodes and coke which are imported from Europe and the United States. The company purchases about 150,000 tonnes of silica annually from the Dunville Mining Company at Villa Marie, Placentia Bay. As the conversion process is very energy intensive, Albright and Wilson is the third largest industrial user of electricity on the Island. The company spends between $20 and $25 million annually in the Province on wages and salaries, electricity and other items such as silica which are purchased from local suppliers.

Food and Beverage Industry

Firms in this industry include those engaged in the manufacture and preparation of meat and poultry products, livestock feeds, dairy products, baked goods and beverages. The export oriented fish products industry, which is the subject of Section V.4.2 of this report, is the single largest contributor to the food and beverage industry. The other firms in the industry primarily serve markets in Newfoundland and Labrador and make an important contribution to the local economy. Exclusive of fish products, the food and beverage industry employed an estimated 1,500 people in 1987. As Map V.4.3.1 indicates, food and beverage firms are concentrated in the major population centres.

There are several firms engaged in the secondary processing of meat and poultry in the Province. The largest such firm is Newfoundland Farm Products Corporation, a Provincially owned

Crown Corporation, which employs about 210 people. The Company was established to process and market products made from locally raised hogs and chickens. The Company has two plants, one in St. John's and the other in Corner Brook. All of its livestock requirements are met by farmers within the Province and its products are sold throughout Newfoundland and Labrador. The volume of sales and employment remained stable in 1987. The Company will begin production and marketing of breaded chicken parts in 1988 which will directly create about 15 additional jobs.

A somewhat smaller meat products business is operated by Blue Buoy Foods Limited. Its meat products are sold under the Chaulkers brand name and include salt meat such as salt beef and salt riblets as well as other products such as sausages, salamis, pepperonis and hamburger patties. Most of these goods are sold within the Province although some are exported to the other parts of Canada. About 40 to 50 of its 105 employees work in the manufacturing end of the business (the remainder are mainly engaged in the distribution of frozen foods). Production increased in 1987 and in 1988 the Company may be adding other meat products to its existing product line.

The Province's dairy products industry consists of three companies which are engaged in the processing of raw milk for consumption within the Province. Most of their raw milk requirements are met by the Province's dairy farms while the remainder is imported. The industry directly employs about 260 people while another 150 people derive their livelihood as independent distributors of dairy products. The largest dairy company in the Province is Brookfield Ice Cream Limited whose 132 employees produce fluid milk, ice cream, ice cream novelties, soft serve mix and juice from concentrate. The second largest dairy products company, Central Dairies, employs about 100 people and makes fluid milk, cream, ice cream, soft serve mix, milk shake mix and juice from concentrate. The other firm, Sunshine Dairy Company, employs 27 people and produces fluid milk.

During 1987, Central Dairies opened a new milk processing plant in Deer Lake with a staff of 13 people to serve markets in Labrador, the West Coast and part of central Newfoundland. In addition, Brookfield Ice Cream Limited undertook an extensive modernization of their Kenmount Dairy Fluid Milk Processing Plant in St. John's which resulted in seven new jobs. The volume and value of dairy product sales generally increased in 1987. Further growth is expected in 1988, largely because of growing per capita consumption of milk in the Province.

There are a number of bakeries located throughout the Province which produce a wide range of baked goods. Most of these bakeries sell their products through their own retail outlets, however, the larger bakeries distribute their products to various retail food stores for sale.

The beverage industry consists of breweries and soft drink manufacturers whose products are primarily for local consumption. The brewing industry consists of three national brewing companies which employed in excess of 400 people during 1987. These companies produce beers and drafts for sale mainly in Newfoundland and Labrador, however, a small percentage is marketed in the Maritime Provinces. The soft drink industry consists of the two largest national soft drink manufacturers which employed over 300 persons in 1987, producing beverages primarily for domestic consumption.

There are also several other companies involved in the food and beverage industry in the Province, including the Newfoundland Tea Company and Newfoundland Margarine. The former manufactures tea for consumption primarily in Newfoundland and Labrador, however, some of the product is sold in the Maritime Provinces and Ontario. Newfoundland Margarine produces two brands of margarine for consumption in the Province.

Since most of the products of the food and beverage industry are for local consumption, the anticipated increase in real personal income in the Province during 1988 should translate into increased local demand for many of these products.

Non-metallic Mineral Products

Non-metallic manufacturing industries shipped products valued at about $40.6 million in 1985, the most recent year for which data is available. Employment in this industry in 1987 was approximately 400. Some of the larger firms include North Star Cement Limited, Trinity Brick Products Limited, Atlantic Gypsum Limited and the Island Tile and Slate Company.

North Star Cement Limited, which is located in Corner Brook, has been in business since 1951. Last year 81,000 metric tonnes of cement were sold and employment during the production period was approximately 100 persons. Annual capacity at the plant increased to 150,000 tonnes as a result of a $4.6 million modernization program in 1986 and enabled the Company to produce special cements in addition to the usual portland variety. Two special cements were produced in 1987. Markets for North Star cement are primarily within the Province. Production and employment are expected to remain stable in 1988.

Trinity Brick Products Limited quarries shale on Random Island for the manufacture of brick at its plant in Milton and, with the exception of intermittent shutdowns, has operated since 1886. Production totalled 1.9 million bricks in 1987 and 33 persons were employed. The bricks produced are marketed primarily throughout the Island although some are shipped to Labrador. Production is expected to increase to about three million bricks in 1988 and employment is expected to be about the same as last year.

Atlantic Gypsum Limited, which is located in Corner Brook, produces gyproc wallboard. Production in 1987 totalled 57,000 tons of wallboard and employment was approximately 110 persons. In 1987, about one-half of the Company's products were sold in the Province and the other half in the Maritime provinces. The Company is planning a six week shutdown in April and May for plant modernization.

The Island Tile and Slate Company at Bourgoyne's Cove began production in 1986. The Company quarries slate which can be used to produce red, green and purple products for a variety of uses including roofing and floor tiles. The Company employed up to 32 people in 1987, up from 18 in 1986, and sold its output in the United States and Newfoundland.

Little statistical information is available on the other manufacturers of non-metallic mineral products in the Province. Of the remaining firms in this industry, however, the largest are pre-mix concrete firms, of which there were 12 in operation serving local markets in 1985.

The prospects for the larger manufacturers of non-metallic mineral products are encouraging in 1988 as most of these firms expect to maintain or expand upon 1987 production levels.

Leather and Allied Products

There are several small firms and craft makers located around the Province which produce a variety of leather products including gloves and handbags. The largest firm, Terra Nova Shoes Limited, is a manufacturer of safety footwear located in Harbour Grace.

The Harbour Grace plant was built in the 1960s and has been quite successful. With annual sales in excess of $16 million, the company commands about 10 percent of the world market and 15 percent of the North American market for safety footwear. The company experienced a good year in 1987 as work proceeded on a major contract to develop and supply the Department of National Defence with a new lightweight boot for the Canadian military.

The company announced a $4.45 million plant expansion in September, 1987, of which up to $2.25 million will be provided by the Province in the form of an equity infusion. The project commenced late in 1987 and will be completed sometime in 1989. The improved production technology, coupled with existing expertise, will place the company in a good position to increase penetration into existing markets for industrial footwear, as well as to compete for large military

footwear contracts in Canada, the United States and abroad. The expansion will provide 100 new jobs by 1989 and bring the workforce to 250 persons.

Textile Products

The clothing industry consists mainly of a number of small firms which produce a variety of handcrafted products such as knitted goods and winter parkas for sale within the Province. The only major clothing firm, Martin's Industrial Supplies, is located in St. John's. This firm employs 50 permanent staff and during peak production periods it adds about another 15 to its workforce. Its products are mainly uniforms, industrial workwear and other 'made to measure' apparel for sale within the Province.

Refined Petroleum Products

The Come By Chance oil refinery was acquired by Newfoundland Energy Limited late in 1986. Initial refurbishing commenced in December, 1986 and was substantially completed by September, 1987. The total project expenditure of approximately US$20 million served to generate peak employment of 530 persons in May, 1987.

The refinery is operated by Newfoundland Processing Limited, a wholly owned subsidiary of Newfoundland Energy Limited. The refinery has the capability of producing a wide range of products including gasoline, diesel fuel, aviation fuel and Naptha. The company took delivery of its first shipment of West African crude oil late in August and began testing the facility shortly thereafter. The first shipments of refined products to the United States and the Gander International Airport were made in September. At full capacity (100,000 barrels of crude oil per day) which the company expects to attain in 1988, the refinery will employ over 200 persons. Additional refurbishing work will take place in 1988, with the expectation that the Isomax Unit, capable of producing additional amounts of jet fuels and distillates, will be in operation before mid-year. The company has also formed a subsidiary, Come By Chance Marketing, to investigate the possibility of establishing retail outlets and marketing gasoline and diesel fuel within the Province.

Newfoundland Hardwoods Limited of Clarenville produces nearly all of the liquid asphalt used in the Province. In addition to the Clarenville facility, the Company also operated two small seasonal plants located in Stephenville and Goose Bay. The company purchases raw liquid asphalt from refineries in Eastern Canada and occasionally from the United States. This material is further processed at the plants and is stored in tanks which are heated by wood chip burners. The processed liquid asphalt is supplied to paving companies who operate small asphalt plants around the Province. About 80 percent of the total output, which is valued at about $20 million annually, is purchased by the Department of Transportation. The remaining 20 percent is utilized by Transport Canada for Airports and National Parks and by commercial and domestic customers. The liquid asphalt may, at some time, be available from the Come By Chance oil refinery.

V.5 CONSTRUCTION

The Construction industry is a major component of the Province's goods producing sector. In 1986, this industry accounted for 25.9 percent of Gross Domestic Product (GDP) in the goods producing sector and about 9.4 percent of total GDP. This industry provided approximately 12,000 person years of employment in 1987 on an annual average basis. As the industry has a high seasonal component, however, annual average figures understate the number of jobs supported by the Construction industry.

During the years between the late 1930s and the 1970s, the Construction industry played a key role in an era that is best described as a milestone in the historical development of the Province's economy. Prior to 1940, economic growth and development had proceeded at a relatively slow pace, however, the Province's strategic location in North America brought Canadian and United States military forces to the Island during the second World War and the requirement for military infrastructure provided a significant stimulus to the level of economic activity in the Province. There was a tremendous demand for the services of the construction industry, in particular, during the war as extensive military facilities were built in the Province. As well, many new roads were built and others improved, particularly on the Avalon Peninsula to provide a suitable transportation system for the movement of military personnel, supplies and equipment. The intensive level of construction activity in the Province during this period generated thousands of jobs in an industry which had previously been a small and relatively underdeveloped component of the Newfoundland and Labrador economy.

Most of the war related construction work was carried out in the late 1930s and early 1940s resulting in a period of prosperity for the Province's construction industry. In 1935, there were only about 3,000 construction workers in the Province, however, by the early 1940s the number of construction workers had increased dramatically. Employment in the construction industry peaked at almost 20,000 in 1942 and the availability of high paying jobs in the construction industry enticed thousands of Newfoundlanders to leave the fishing industry. The level of construction activity in the Province was intensive until 1943, when most major projects related to the war effort were completed. While the demand for construction workers declined after 1943 and many workers returned to outport communities and the fishing industry, for the remainder of the 1940s the level of construction activity was higher than at any time prior to the war. In 1949, nearly 6,500 workers were employed in the construction industry, more than double the number employed in 1935.

Construction activity increased once again in the 1950s, following Confederation with Canada, as the Province entered the early stages of an intensive development phase that lasted into the 1970s. During the early 1950s, the annual value of construction work performed in the Province was only about $240 million in real terms (1987 constant dollars). Following the early 1950s, and particularly after 1955, the number of construction projects carried out in the Province increased steadily such that throughout the 1950s, construction expenditures rose at an annual average rate of nearly 10 percent, in real terms. In 1960, the value of construction work performed in the Province amounted to about $600 million in 1987 constant dollars, more than double the level in 1950. The increasing employment in the construction industry which accompanied the rising level of activity between 1951 and 1960 is evident in Table V.5.1. Much of the increased construction investment and employment in the Province was related to the construction and improvement of roads and highways as well as certain industrial projects which began in the later part of the decade.

Economic development in the Province progressed at an exceptionally rapid pace during the 1960s and early 1970s as a concerted effort was made to increase both the level and range of public goods and services available to the population. The impact on the construction industry was enormous and between 1960 and 1971, the real value of construction work performed in the Province nearly tripled as indicated in Table V.5.2. Construction expenditures in 1971 reached an all time high of $1,675 million in real terms (1987 constant dollars), nearly five times the level recorded in 1955 when construction activity began to increase significantly. The peak level of real construction expenditures reached in 1971 was not matched again until 1983.

TABLE V.5.1

LABOUR CONTENT IN CONSTRUCTION ACTIVITY, NEWFOUNDLAND AND LABRADOR 1951 TO 1960

Year	Labour Content(1)
1951	8,428
1952	9,771
1953	9,014
1954	9,778
1955	10,022
1956	11,155
1957	9,875
1958	9,226
1959	11,382
1960	11,817

(1) Estimate of total employment including employees, own account and paid workers in construction activity, expressed in person year equivalents.

Source: Historical Statistics of Newfoundland and Labrador, Volume II(V), Table P-1.

Table V.5.2

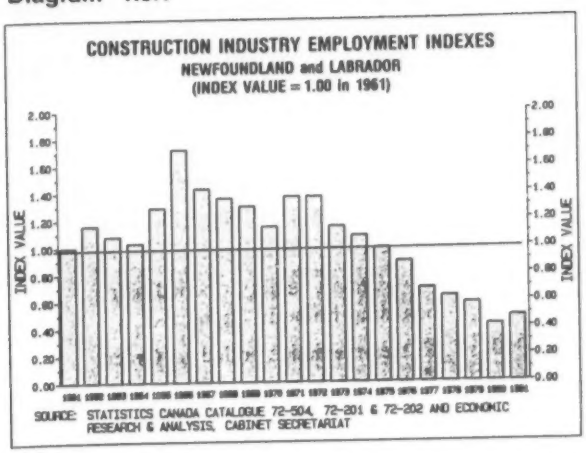
VALUE OF CONSTRUCTION WORK PERFORMED, NEWFOUNDLAND AND LABRADOR, 1960 TO 1987 (Millions of 1987 Constant Dollars)

Year	Value of Construction	Year	Value of Construction
1960	599.6	1974	1,294.2
1961	740.1	1975	1,195.9
1962	872.2	1976	1,320.8
1963	783.9	1977	1,068.8
1964	754.6	1978	1,041.9
1965	734.6	1979	1,301.4
1966	964.4	1980	1,190.7
1967	989.7	1981	1,321.1
1968	1,094.5	1982	1,406.4
1969	1,092.1	1983	1,748.8
1970	1,343.3	1984	1,854.9
1971	1,675.0	1985	1,924.5
1972	1,303.9	1986	1,635.0
1973	1,257.6	1987	1,634.4

Note: Data is actual from 1960 to 1985, preliminary actual for 1986 and preliminary for 1987.

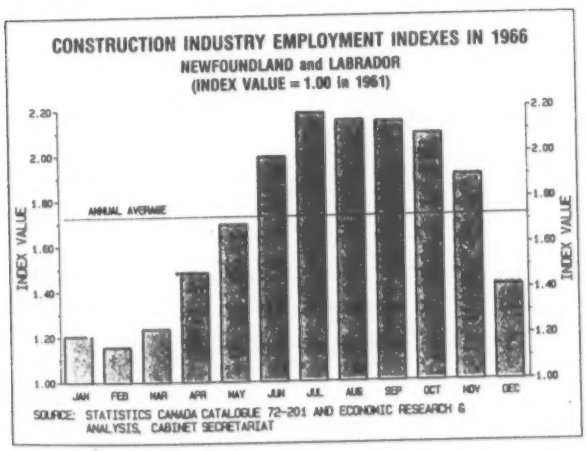
Source: Historical Statistics of Newfoundland and Labrador, Volume II(V), Table P-1; Statistics Canada Catalogue 64-201 and 61-206; and Economic Research & Analysis Division, Cabinet Secretariat.

Diagram V.5.1


CONSTRUCTION INDUSTRY EMPLOYMENT INDEXES
NEWFOUNDLAND and LABRADOR
(INDEX VALUE = 1.00 in 1961)
INDEX VALUE
INDEX VALUE
SOURCE: STATISTICS CANADA CATALOGUE 72-504, 72-201 & 72-202 AND ECONOMIC RESEARCH & ANALYSIS, CABINET SECRETARIAT

High levels of construction expenditures during the 1950s, 1960s and 1970s permitted the development of an extensive range of infrastructure throughout the economy, relative to earlier years, and resulted in much improved levels and standards of education and health care services in the Province as well as an expanded road and highway system. Numerous industrial development and hydroelectric projects were also undertaken. A list of many of the projects carried out during this thirty year period is provided in Table V.5.3. Expansion of the Province's educational system included the construction, over a number of years, of Memorial University, the College of Fisheries and numerous trade schools and associated infrastructure such as residences and dining halls. As well, the primary and elementary school system was expanded during this period resulting in an improved level and quality of education in the Province. In addition, a number of hospitals were built and others enlarged, some of which offered education in medical fields such as nursing and all of which contributed to a much higher standard of health care in the Province. Roads and highways built over this period numbered in the thousands of miles while massive hydroelectric projects carried out made it possible to provide electric power to hundreds of rural communities. Industrial development projects carried out included the construction of facilities for the iron ore mines in Labrador, a phosphorus plant in Long Harbour (ERCO), the Labrador Linerboard Mill and the Come-by-Chance oil refinery. The extensive provision of infrastructure throughout this period generated demand for the services of the construction industry which was comparable only to the war related construction boom of the late 1930s and early 1940s and a level of activity which is unequalled in the Province's economic history.

Diagram V.5.2


CONSTRUCTION INDUSTRY EMPLOYMENT INDEXES IN 1966
NEWFOUNDLAND and LABRADOR
(INDEX VALUE = 1.00 in 1961)
ANNUAL AVERAGE
INDEX VALUE
INDEX VALUE
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
SOURCE: STATISTICS CANADA CATALOGUE 72-201 AND ECONOMIC RESEARCH & ANALYSIS, CABINET SECRETARIAT

The heightened level of activity in the construction industry throughout the 1960s and early 1970s was reflected in the number of construction workers employed. Diagram V.5.1 illustrates fluctuations in annual average levels of construction industry employment from 1961 to 1981, indexed to 1961. For example, in 1966 the value of the employment index was about 1.72 indicating that construction employment was about 172 percent of the level in 1961, the base year, whereas in 1981, the employment index was only about 0.48, or 48 percent of the 1961 level of employment. It is clear from Diagram V.5.1 that considerable construction employment was generated on an annual average basis throughout the 1960s and early 1970s, however, annual statistics mask the seasonal nature of construction industry employment and hence understate the magnitude of employment in peak months of the year during the height of activity. Annual average construction employment peaked in 1966 and the actual number of workers during each month of that year, indexed to annual average employment in 1961, is illustrated in Diagram V.5.2. This diagram reveals considerable monthly (or seasonal) variation in

TABLE V.5.3

MAJOR PROJECTS 1950s, 1960s and 1970s
NEWFOUNDLAND and LABRADOR

Year	Project
	EDUCATION
1961	New MUN campus opened
1963	Construction on the last of 11 trade schools is completed - 2 residences and a dining hall are opened
1963-64	Old MUN campus converted to College of Fisheries
1965	Education Building, Chemistry/Physics Building, Thompson Student Center, 6 residence buildings, 3 church colleges, 14 temporary buildings and the Marine Science Research Laboratory were under construction and St. Bride's College was expanded
	INDUSTRIAL DEVELOPMENT
1959	Carol Lake project begins
1962	Wabush Mines begins
1966	ERCO project begins
1970	Labrador Linerboard construction begins
1971	Come By Chance oil refinery construction begins
	ELECTRIC POWER
1956	First phase of 10,000 HP thermal generating station on southside of St. John's Harbour completed
1963	Rural electrification program receives funding; by 1972 every community in the Province with more than 15 subscribers were supplied with electricity
1964	Bay d'Espoir power development proceeds
1967	Churchill Falls development proceeds
1968	Work begins on a Thermal Generating Station in Holyrood
1975	Hinds Lake hydroelectric development project begins
1979	Upper Salmon hydroelectric development project begins

Year	Project
	HEATLH
1954	Grace Hospital enlarged
1958	Agnes Pratt facility opened as a boarding home in September
1960	Nurses residence added to Grace Hospital
1961-62	Central Newfoundland Hospital in Grand Falls opened
1962	St. Clares Hospital doubled in size
1963	13 storey nurses residence added to The General Hospital
1965	School of Nursing constructed in Corner Brook - Hospital on Bell Island opened - Hoyles Home opened
1966	Hospital in Fort Pepperell re-opened after refurbishing was completed
1967	St. Clares Hospital enlarged
1969	Expansion of Western Memorial Hospital in Corner Brook begins
1973	Health Sciences Complex opened
1976	Escasoni retirement home construction started; accepted first residents May 2, 1977
	ROADS & HIGHWAYS
1950-66	2,090 miles of new road built - 859 miles of road paved - 2,125 miles of road rebuilt
1965	Trans Canada Highway completed
1970	St. John's arterial rebuilt
1972-78	196 miles of road built - 196 miles of road paved - 1,318 miles of road rebuilt

Source: Based on information contained in an unpublished history of the economic growth and development of Newfoundland and Labrador by Brian C. Bursey; Economic Research and Analysis Division, Cabinet Secretariat.

the 1966 level of construction employment relative to 1961. While annual average employment in 1966 was about 72 percent higher than the 1961 average, on a monthly basis employment rose to much higher levels, peaking in July when the number employed was more than double the annual average employment in 1961. Available statistics indicate that in this month of 1966, employment in the construction industry may have ranged between 25,000 and 30,000 workers. The level of construction activity in 1966 was no doubt a major contributor to the unemployment rate of only 5.8 percent, the lowest it has been in the past 22 years. It is interesting to note that peak construction employment during the 1960s and 1970s did not coincide with the peak level of real construction expenditures in 1971. This may reflect, at least in part, productivity gains which occurred as the construction industry developed and increased its use of capital machinery and equipment. By the early 1970s, many major projects were nearing completion and by 1975 the number of construction workers employed had declined to levels experienced prior to the construction boom which began in the 1950s.

The end result of the period of intensive construction activity which occurred between 1950 and the mid-1970s was, relative to earlier years, a highly developed economy. The level of public goods and services had been greatly improved and the economy was set on a path of long term growth and expansion. Although employment in the construction industry has remained lower than during peak construction years in the 1960s, the economic growth and development that began during the period has continued since, resulting in a level of demand for the services of the construction industry well above the period prior to 1960.

TABLE V.5.4

CONSTRUCTION INDUSTRY: ILLUSTRATIVE EXAMPLES OF BUILDING AND ENGINEERING CONSTRUCTION

Category	Type of Construction
Building, Developing & General Contracting Industries	
Residential Building & Development	Houses, apartments, and residential renovations which involve more than one trade
Non-Residential Building & Development	
Manufacturing & Light Industrial Building	Fish processing plants, textile factories & sewage treatment plants
Commercial Building	Hotels, office buildings, shopping centres, warehouses
Institutional Buildings	Churches, hospitals, schools
Industrial & Heavy (Engineering) Construction Industries	
Industrial Construction (Other Than Buildings)	Oil refineries, cement plants, pelletizing plants, pulp & paper mills
Highway & Heavy Construction	Roads, streets, bridges, sewers, water mains, hydroelectric generating stations, electric power transmission lines & towers, breakwaters, wharves & parks

Note: Highway construction excludes maintenance.
Source: Standard Industrial Classification (1980) and Economic Research and Analysis Division, Cabinet Secretariat.

The output of the construction industry is quite varied, given the dissimilar nature of the structures and services which are required throughout the economy. The four major industry groups which make up the aggregate construction industry are: Building, Developing and General Contracting industry; Industrial and Heavy (Engineering) Construction industry; Trade Contracting industry; and Service Industries Incidental to Construction, the smallest component of the Construction industry. An examination of the types of output provided by each of these industry sub-groups provides considerable insight into the structure of the construction industry.

TABLE V.5.5

CONSTRUCTION INDUSTRY: ILLUSTRATIVE EXAMPLES OF TRADE CONTRACTING CONSTRUCTION AND OTHER SERVICES INCIDENTAL TO CONSTRUCTION

Category	Examples of Construction Preparation or Function
Trade Contracting Industry	
Site Work	Wrecking of Buildings, Digging Water Wells, Installation of Septic Tanks & Construction Site Excavating
Structural & Related Work	Piledriving, Concrete Forms, Placing & Stripping, Concrete Pouring & Structural Steel Erection
Exterior Close-In Work	Bricklaying, Installation of Siding (aluminum, steel, etc.), Glass Installation, Foam & Glass Fibre Installation & Asphalt Roof Shingles Installation
Plumbing, Heating & Air Conditioning, Mechanical Work	Hot Water Plumbing Installation, Installation of Forced Air Furnaces & Air Conditioning Equipment
Mechanical Specialty Work	Automatic Sprinkler Installation, Installation of Cold Storage Systems, Smoke Detection Sensors, Large-Scale Machinery & Equipment & Pipe Insulating
Electrical Work	Wire Installation - Houses, Buildings & Structures
Interior & Finishing Work	Plastering, Drywall Installation, Cabinetry Installation & Finishing, Interior & Exterior Building Painting, Tiling, Floor Finishing & Carpet Laying
Other Trade Work	Installation of Escalators & Elevators, Metal Store Front Frames, Residential Swimming Pools & Construction Site Welding
Service Industries Incidental to Construction	
Project Management Construction	Construction Contract Management Services & Supervision
Other Services Incidental to Construction	Land Assembling & Developing & House Moving Services & Construction Service Testing & Inspection

Source: Standard Industrial Classification (1980) and Economic Research and Analysis Division, Cabinet Secretariat.

Illustrative examples of the various types of Building and Engineering construction carried out within the construction industry are provided in Table V.5.4. The Building, Developing and General Contracting industry provides new houses and apartment buildings as well as renovations to existing structures. Firms comprising this component of the industry also construct commercial, light industrial and institutional buildings for all industries in the Province. Larger projects such

as the construction of the oil refinery at Come-by-Chance or the installation of a syncro-lift at the St. John's dockyard would be carried out by the Industrial and Heavy (Engineering) Construction industry. Firms in this industry also construct roads and highways in the Province and install electrical, water and sanitation systems.

Table V.5.6

NUMBER OF ESTABLISHMENTS IN THE CONSTRUCTION INDUSTRY NEWFOUNDLAND AND LABRADOR, END OF DECEMBER, 1987

Type of Construction	Number of Establishments	Percent of Total
1. Total Service Industries Incidental to Construction	**35**	**1.6**
Project Management Construction	6	0.3
Other Services Incidental to Construction	29	1.3
2. Total Industrial & Heavy (Engineering) Construction Industry	**197**	**8.9**
Industrial Construction (Other Than Buildings)	14	0.6
Highway & Heavy Construction	183	8.3
3. Total Building, Developing & General Contracting Industry	**892**	**40.3**
Residential Building & Development	822	37.1
Non-Residential Building & Development	70	3.2
4. Total Trade Contracting Industry	**1,090**	**49.2**
Site Work	187	8.4
Structural & Related Work	42	1.9
Exterior Close-In Work	151	6.8
Plumbing, Heating & Air Conditioning, Mechanical Work	132	6.0
Mechanical Specialty Work	39	1.8
Electrical Work	209	9.4
Interior & Finishing Work	296	13.4
Other Trade Work	34	1.5
Grand Total	**2,214**	**100.0**

Source: Statistics Canada, Economic Research and Analysis Division, Cabinet Secretariat.

The Trade Contracting industry consists primarily of firms engaged in specialized aspects of construction and repair. For example, a general contractor may construct an office building but will frequently engage a trade contractor, through a sub-contract, to carry out electrical work or glass installation, and so on. The Trade Contracting industry is comprised of a large variety of specialized trades, as indicated in Table V.5.5.

Trade Contractors provide inputs for most construction projects. While the level of demand for the services of Trade Contractors is influenced by the level of activity in other components of the construction industry, activity in any or all parts of the construction industry is not an absolute indicator of the amount of work being carried out by Trade Contractors. For example, the level of demand for plumbing or electrical work related to renovation and repair of existing structures

may increase at a time when activity in the construction industry as a whole may be fairly stable. Table V.5.5 provides examples of the extensive range of services provided by this component of the construction industry and illustrates, to some extent, the composition of demand in this segment of the construction industry.

Table V.5.7

NUMBER OF ESTABLISHMENTS BY EMPLOYMENT SIZE IN NEWFOUNDLAND AND LABRADOR (1987)

Standard Industrial Classification	Employment Size						Total Number of Establishments
	0-19 (1)	20-49	50-99	100-199	200-499	(2)	
Building, Developing & General Contracting Industry	845	29	5	3	0	10	892
Industrial & Heavy (Engineering) Construction Industry	149	28	4	4	2	10	197
Trade Contracting Industry	1,028	35	5	0	0	22	1,090
Service Industries Incidental to Construction	35	0	0	0	0	0	35
Total	**2,057**	**92**	**14**	**7**	**2**	**42**	**2,214**

(1) This category includes firms which were listed as employers but did not have any employees at the time the information was assembled. It also includes businesses which did not have employees, but which expected to have employees within 12 months.

(2) These are businesses for which no information on number of employees was available.

Source: The Business Register Division, Statistics Canada, Standard Industrial Classification (1980) and Economic Research and Analysis Division, Cabinet Secretariat.

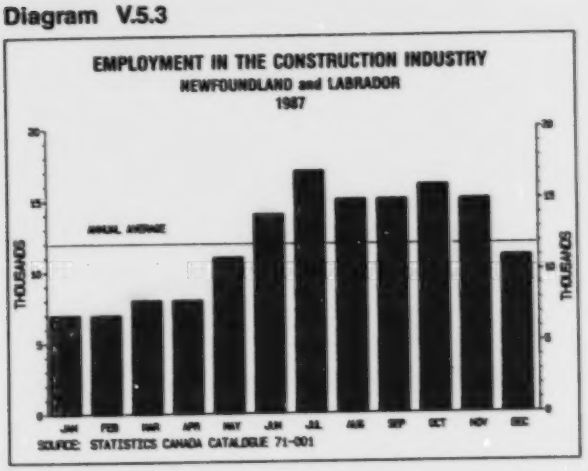
There were a total of 2,214 establishments in the Province's construction industry in 1987 and the distribution of these establishments among the four components of the construction industry is provided in Table V.5.6. The largest number of establishments were concentrated in the Building, Developing and General Contracting industry (40.3%) and in the Trade Contracting industry (49.2%). The concentration of firms was lowest for industries providing services Incidental to Construction (1.6%) and relatively low in Industrial and Heavy Construction industries (8.9%).

The majority of construction firms in the Province do not retain a large number of employees except during periods of exceptionally high demand such as that which occurred in the 1950s, 1960s and 1970s. In 1987, most construction firms in the Province were involved in Building, Developing and General Contracting as well as Trade Contracting and most of these firms retained fewer than 20 employees (see Table V.5.7). Of the total number of construction establishments in Newfoundland and Labrador in 1987, 92.9 percent (2,057 establishments) employed 19 workers or less, according to the available information. The largest number of these relatively small employers were found in the Building, Developing and General Contracting and the Trade Contracting industries. About 4.2 percent (92 establishments) of the firms employed 20-49 individuals; these firms were fairly evenly distributed across all components of the Construction industry with the exception of

Services Industries Incidental to Construction where all establishments had fewer than 20 employees. Only 1.0 percent (23 establishments) of the total number of firms employed 50 or more workers, suggesting that the construction industry in Newfoundland and Labrador is comprised mainly of small businesses.

Additional information relating to the structure of the construction industry in the Province is provided by a comparison of Census labour force data with establishment statistics. In 1981, the most recent Census year for which such detailed data exists, there were 16,575 workers in the construction labour force. Of these, approximately 29 percent (4,735 workers) were attached to the Building, Developing, and General Contracting industry; an additional 38 percent (6,245 workers) comprised the Trade Contracting labour force while about 29 percent (4,810 workers) of the labour force was attached to the Industrial and Heavy Construction industry. Thus, about 90 percent of the construction firms (Building, Developing and General Contracting and Trade Contracting firms) accounted for about 66 percent of the labour force, while about 9 percent of the construction firms (Industrial and Heavy Construction firms) held 29 percent of the labour force. The distribution of the labour force among these industries is consistent with the large segment of the construction industry concentrated in the Building, Developing, and General Contracting industry and the Trade Contracting industry. It is also clear that the few large firms in the Industrial and Heavy Construction industry hold a relatively large proportion of the construction labour force. This results from the large number of workers required to carry out the major construction projects which comprise much of the activity of this industry.

Diagram V.5.3



The information required to identify the spatial distribution of construction firms was not available, however, it is clear from Table V.5.8 that the industry is an important source of employment for rural Newfoundlanders. This table reveals that a large number of the Province's construction workers (nearly 78 percent in 1981) reside in smaller communities. This is a rather interesting characteristic of the construction labour force, given that most of the construction activity which occurs in the Province is carried out in specific locations, mainly in larger, urban centres. This suggests that construction workers migrate from rural communities in all parts of the Province to locations where construction projects are being carried out. It is likely that most of the migration to construction sites takes place during the spring and summer months since the construction industry has a large seasonal component. Diagram V.5.3 illustrates that the level of employment rises in the summer months and declines during the fall and winter months when weather conditions are unfavourable for carrying out some construction activities. This migration of construction workers is reminiscent of the 1930s and 1940s when, in response to a high level of demand for construction workers, individuals migrated to construction sites from rural communities. It would appear that this behaviour has continued ever since and has become a notable characteristic of the construction industry labour force in the Province.

Table V.5.8

THE CONSTRUCTION INDUSTRY LABOUR FORCE, URBAN AND RURAL AREAS OF NEWFOUNDLAND AND LABRADOR, 1981

Urban Centres	Number of Construction Workers	Percent of Total Construction Labour Force
St. John's	1,905	11.5
Corner Brook	630	3.8
Mount Pearl	395	2.4
Stephenville	305	1.8
Grand Falls and Windsor	245	1.5
Labrador City	120	0.7
Gander	110	0.7
Total-Urban Centres	**3,710**	**22.4**
All Other Communities (Rural Areas)	12,865	77.6
Total Urban and Rural	**16,575**	**100.0**

Source: Statistics Canada, 1981 Census of Canada and Economic Research and Analysis Division, Cabinet Secretariat.

The willingness of construction workers to migrate to areas where construction work is occurring is important since much of the activity tends to be concentrated in specific locations. Table V.5.9 reveals that in 1986, a representative year, almost 80 percent of the value of building permits relating to residential construction work in the Province were issued in larger centres while only 20

Table V.5.9

TOTAL VALUE OF RESIDENTIAL BUILDING PERMITS ISSUED IN LARGER CENTRES OF THE PROVINCE, 1986 (expressed as percent of total)

Centre	Percent of Total Value
St. John's Metropolitan Area	69.0
Corner Brook	3.7
Gander	2.4
Grand Falls	1.9
Deer Lake	1.5
Stephenville	1.3
Total	**79.8**

Source: Statistics Canada, Catalogue 64-203 and Economic Research and Analysis Division, Cabinet Secretariat.

percent were issued in smaller communities. Available statistics indicate that smaller communities rarely contribute more than one-half of one percent to the total value of building construction in the Province. Furthermore, many of the residential units constructed in smaller towns would not require the services of the construction industry since houses built in rural communities are often constructed by the owner.

As is the case for residential construction, construction related to commercial structures occurs in larger towns and cities. In 1986, 92.5 percent of the total value of commercial construction activity, as measured by commercial building permits registered, was carried out in St. John's, Gander, Grand Falls, and Corner Brook, with the St. John's area contributing 87.3 percent to the total. The large concentration of commercial construction in these communities reflects the fact that much of the Province's commercial activity is transacted through these centres which serve as major distribution centres for hundreds of smaller communities.

Industrial construction, engineering construction and the construction of institutional and government facilities tends to be less location specific than residential and commercial construction. This is because the construction projects carried out by this industry provide structures that may be required in locations anywhere within the economy. For example, the construction of a road, a government building or a new structure for one of the Province's resource industries, such as the fishing, forestry or mining industries, will occur when and where demand arises. Table V.5.10 shows that although a significant proportion of these types of construction projects occurs in larger centres, relative to residential and commerical construction, the concentration of these activities in larger centres is considerably lower. From year to year, as projects are completed in one area of the Province and begin in another, the location of such construction work will change.

Table V.5.10

CONCENTRATIONS OF THE VALUE OF BUILDING PERMITS ISSUED FOR INDUSTRIAL AND INSTITUTIONAL AND GOVERNMENT BUILDING CONSTRUCTION, NEWFOUNDLAND AND LABRADOR, 1986

Location	Percent of Total Industrial Permits	Percent of Total Institutional and Government Construction Permits
St. John's Metropolitan Area	48.1	52.7
Corner Brook	7.3	14.8
Parsons Pond	7.1	0.0
Gander	5.8	8.2
Grand Falls	5.7	1.1
Cormack	4.8	0.0
Cow Head	3.2	0.0
Port Au Choix	2.6	0.8
Twillingate	2.4	3.4
Other Areas	13.0	19.0
Total, All Areas	100.0	100.0

Source: Statistics Canada Catalogue 64-203 and Economic Research and Analysis Division, Cabinet Secretariat.

The Newfoundland and Labrador construction industry is a billion dollar industry. In 1987, the total value of construction work performed was $1,634.4 million and although this is not quite as high, in real terms, as the value of construction work performed in the years since 1983, Table V.5.2 reveals that the real value of construction work performed in 1987 was well above levels recorded during the earlier years of rapid economic development in the Province. The distribution of total construction expenditures in 1987 by type is provided in Table V.5.11 which indicates that residential, commercial and engineering construction accounted for the largest proportion of expenditures; these distributions are generally the same for earlier years as well. Section X of this report provides additional detail on the various categories of investment in the Province.

Table V.5.11

DISTRIBUTION OF TOTAL CONSTRUCTION BY TYPE, NEWFOUNDLAND AND LABRADOR, 1987

Type of Construction	Percent of Total
Total Building Construction	57.9
Residential	33.6
Industrial	2.6
Commercial	11.3
Institutional	7.6
Other Building Construction (1)	2.8
Total Engineering Construction	42.0
Total Construction	100.0 (2)

(1) Includes such structures as aircraft hangars, passenger terminals, and farm buildings (excluding dwellings).

(2) Components may not add due to independent rounding. Total includes expenditures on both capital and repair construction. Values are preliminary

Source: Statistics Canada Catalogue 64-201, and Economic Research and Analysis Division, Cabinet Secretariat.

Industries involved in the building of structures other than residential housing in 1987 accounted for a large proportion of the total value of construction. Over 65 percent of total construction expenditures in the Province were related to the construction of commercial, industrial, and institutional buildings as well as engineering construction such as the building of roads, highways, electric power systems and other utilities. Last year, demand for the services of most construction industries strengthened as discussed in Section X of this report. Slight decreases in expenditures in some categories of engineering construction and on commercial facilities were recorded. The decline in expenditures on commercial buildings resulted from the excess supply of commercial space in the St. John's area, the largest market in the Province for such structures. Last year, the vacancy rate for commercial office space in St. John's was 17.9 percent, up from 15.6 percent in the previous year. Expenditures on renovations to commercial buildings in St. John's, however, rose sharply in 1987 reflecting the willingness of the business community to improve and expand their facilities in the favourable business environment which resulted from strong economic growth in the past two years.

Residential construction is one of the most important components of the construction industry in terms of both dollar value and the essential infrastructure provided to the population. Residential activity includes the construction, renovation, and conversion of single and double dwellings,

seasonal dwellings, row housing and apartment structures. The largest volume of activity is related to the construction of single dwelling units which accounted for approximately 94 percent of total housing starts in 1987. Row housing and apartment structures are built mainly in urban areas where demand for rental housing is greatest. The urban and rural concentrations of various types of housing units constructed in 1987 is provided in Table V.5.12.

Table V.5.12

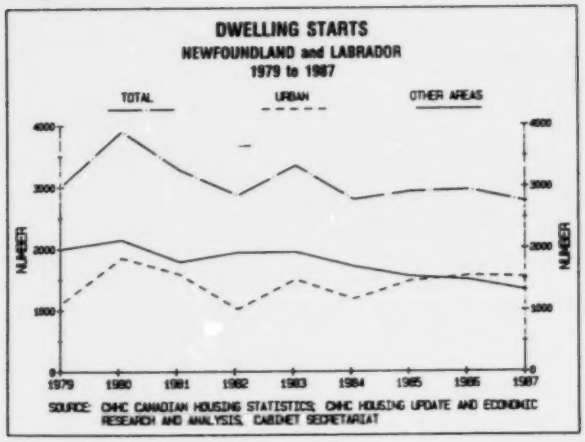
TOTAL DWELLING STARTS BY TYPE OF STRUCTURE NEWFOUNDLAND AND LABRADOR, 1987

Area	Singles	Semi-detached	Row	Apartment	Total
Urban	1,362	26	4	56	1,448
Other	1,168	46	0	20	1,234
Total	2,530	72	4	76	2,682

Note: Data is preliminary

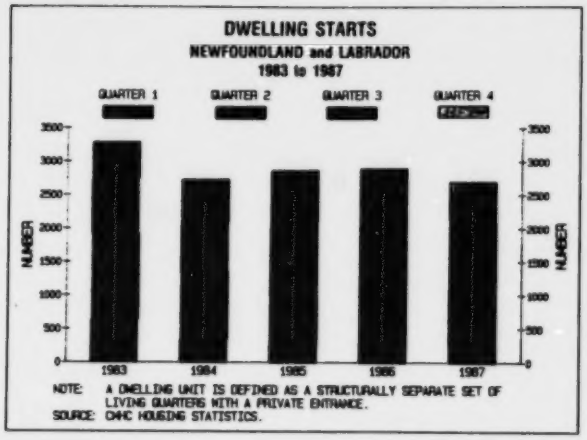
Source: CMHC Housing Update and Economic Research and Analysis Division, Cabinet Secretariat.

Diagram V.5.4



Trends in dwelling starts differ significantly between urban and rural areas of the Province, particularly in recent years. It is clear from Diagram V.5.4 that from 1981 to 1983 the impact of the recession on housing activity was much greater in urban areas than in rural areas. The diagram also illustrates that until 1985 dwelling starts in rural areas exceeded dwelling starts in urban areas by a significant margin. Since 1985, however, trends have reversed as dwelling starts in rural areas fell to a lower level than in urban areas. The increasing number of housing starts in urban areas reflects the economic recovery from the effects of the recession. The decline in rural areas is likely related to the continuing process of urbanization and migration to larger centres in the Province and to other provinces in Canada, particularly by younger individuals.

Diagram V.5.5



There were a total of 2,682 housing starts in the Province in 1987, about seven percent below the number of starts registered in 1986. Diagram V.5.5 illustrates that during the first half of 1987, housing starts fell relative to the same period in 1986 as a result of harsh weather conditions and large snowfall accumulations. Starts increased during the third quarter but fell again during the last months of the year. The largest declines occurred in areas with a population of less than 10,000, where the number of dwelling starts fell by 12.2 percent and completions fell by 43.3 percent. In centres with a population of 10,000 or more, housing starts declined by only two percent, however, construction activity was strong as the number of residential units completed rose by 45.6 percent.

A large proportion of the Province's population resides in the areas of Corner Brook and St. John's and this is reflected in the fact that, in 1987, these two areas accounted for 47 percent of total housing starts in Newfoundland and Labrador. The performance of the residential housing industry differed considerably between these two areas. Economic growth was strong in the Corner Brook area and this was reflected in the value of building permits for the City which rose by approximately 157 percent. The number of housing starts rose by 46.4 percent and the average number of units under construction rose by 54.7 percent. Demand for new residential units in Corner Brook was also strong, as indicated in Table V.5.13. While activity in the Corner Brook residential housing industry was consistent with the trend in economic growth, the opposite was the case in St. John's for some parts of this industry.

The residential housing industry in the Province is concentrated in the St. John's Census Metropolitan Area (CMA). In 1987, residential construction in this area accounted for 74.6 percent of urban housing starts and 40.3 percent of total housing starts in the Province. Last year, housing starts in the CMA fell by 11 percent and the average number of units under construction dropped by 5.8 percent. The reduced level of activity resulted primarily from the construction of fewer semi-detached houses and apartment structures which offset an increase in single-dwelling construction of 2.7 percent. Decreased demand for apartment units (in larger, non-Government owned buildings) is evidenced by the high vacancy rate for such accomodations which stood at 10.1 percent in October, 1987. Table V.5.14, which provides details of dwelling starts in the CMA in 1987, reveals that a significant number of new residential units are being constructed in some communities near the City.

Table V.5.13

DWELLING STARTS, COMPLETIONS AND UNDER CONSTRUCTION NEWFOUNDLAND AND LABRADOR, 1987

Area	Starts	Completions	Average Number of Units Under Construction
St. John's CMA	1,080 (-11.0%)	1,326 (43.0%)	1,097.6 (-5.8%)
Carbonear CA	44 (-12.0%)	56 (9.8%)	83.0 (-18.0%)
Corner Brook CA	183 (46.4%)	160 (56.9%)	168.2 (54.7%)
Gander CA	42 (-6.7%)	49 (44.1%)	18.5 (29.4%)
Grand Falls CA (2)	99 (130.2%)	95 (115.9%)	71.7 (107.8%)
Labrador CA	0 (N.A.)	0 (N.A.)	0 (N.A.)
Total Urban (10,000 population & over)	1,448 (-2.0%)	1,686 (45.6%)	1,438.9 (1.0%)
Total Other Areas (less than 10,000 population)	1,234 (-12.2%)	704 (-43.3%)	2,223 (1) (-0.5%)
Total Province	2,682 (-7.0%)	2,390 (-0.4%)	3,631 (1) (-5.0%)

(1) Units under construction as of December 31, 1987 only.

(2) It should be noted that census definitional changes concerning certain areas were most significant in Grand Falls.

N.A. = Not applicable because the number in 1986 was zero.

CA = Census Agglomeration.

CMA = Census Metropolitan Area.

Data is preliminary.

Figures in parentheses refer to percentage change from 1986.

Data for 1986 and 1987 are based on 1981 and 1986 census area definitions respectively.

Source: CMHC Housing Update; Statistics Canada Catalogue 64-002 and Economic Research and Analysis Division, Cabinet Secretariat.

Table V.5.14

DWELLING STARTS AND COMPLETIONS
ST. JOHN'S METROPOLITAN AREA 1987

	Starts	Completions
Bay Bulls, Town	6	3
Conception Bay South, Town(1)	138	158
Flatrock, Town	10	15
Goulds, Town	85	83
Hogan's Pond, Town	0	0
Mount Pearl, Town	174	174
Paradise, Town	110	119
Petty Harbour-Maddox Cove, Town	3	6
Portugal Cove, Town	26	24
Pouch Cove, Town	12	7
St. John's Area, Town	13	19
St. John's, City	416	610
St. Phillip's, Town	7	23
St. Thomas, Town	13	11
Torbay, Town	52	51
Wedgewood Park, Town	10	19
Witless Bay, Town	5	4
Total	1,080	1,326

(1) Lawrence Pond L.I.D. subdivisions 'P' and 'Q' annexed to Conception Bay South Town – January 1, 1987.

Data is based on the 1986 Census Area definitions.

Source: Canada Mortgage and Housing Corporation.

Table V.5.15

DWELLING STARTS IN THE CITY OF ST. JOHN'S AND NEARBY TOWNS EXHIBITING STRONG GROWTH

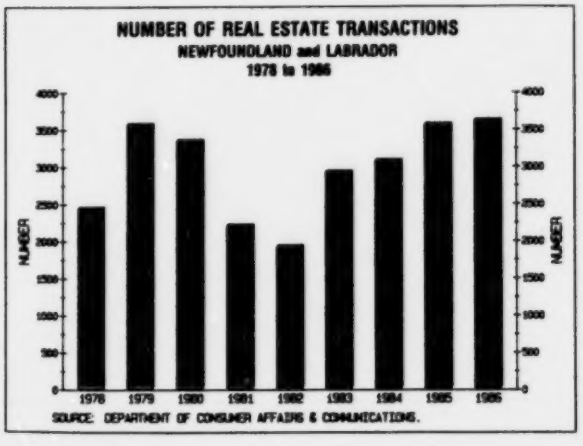
	1984	1985	1986	1987	Total
St. John's	436	535	549	416	1,936
Mount Pearl	135	192	135	174	636
Conception Bay South(1)	81	126	123	138	468
Paradise	53	66	137	110	366
Goulds	30	41	102	85	258
Totals for Nearby Towns	299	425	497	507	1,728

(1) Lawrence Pond L.I.D. subdivisions 'P' and 'Q' annexed to Conception Bay South Town January 1, 1987. Data prior to 1987 based on 1981 Census area definitions; 1987 based on 1986 definitions.

Source: Statistics Canada Catalogue 64-002, Canada Mortgage and Housing Corporation and Economic Research and Analysis Division, Cabinet Secretariat.

The number of new residential units being constructed in larger towns near the City of St. John's have been increasing in recent years with most new houses being constructed in Mount Pearl and Conception Bay South. Since 1984, a total of 636 housing starts were recorded in Mount Pearl and 468 in Conception Bay South. The number of new units being constructed in Paradise has also increased in recent years. In combination, housing starts in these communities in 1987 have exceeded the number of starts in the City of St. John's. Growth in areas outside the City has resulted from lower costs for land in addition to the availability of an improved level of services in these communities. A new arterial road connecting Manuels to the Trans Canada Highway has shortened commuting time from Conception Bay South to St. John's and this has undoubtably enhanced the attractiveness of cheaper building lots available in this area.

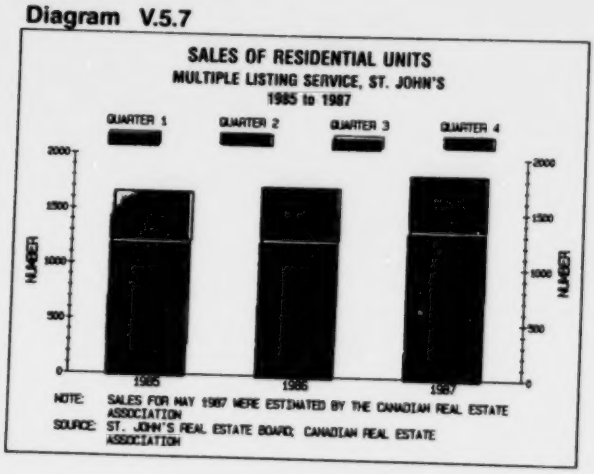
Diagram V.5.6



Growth in the Province's economy since 1985 is reflected in an increasing number of real estate transactions throughout the Province. Diagram V.5.6 reveals that following the speculative real estate boom that accompanied the discovery of Hibernia in 1979, the recession of the early 1980s had a severe impact on real estate sales throughout the Province. In 1979, there were a total of 3,553 real estate transactions in the Province, up from 2,423 transactions in 1978; the number of transactions declined from the 1979 high level to a low of 1,905 units in 1982, the lowest number of real estate transactions in the preceding 10 years. In 1983 there were signs of improvement in the market and in 1986, 3,604 properties were sold, surpassing the level of sales in 1979 and registering the highest number of transactions in the history of the market. The majority of real estate transactions are related to the sale of

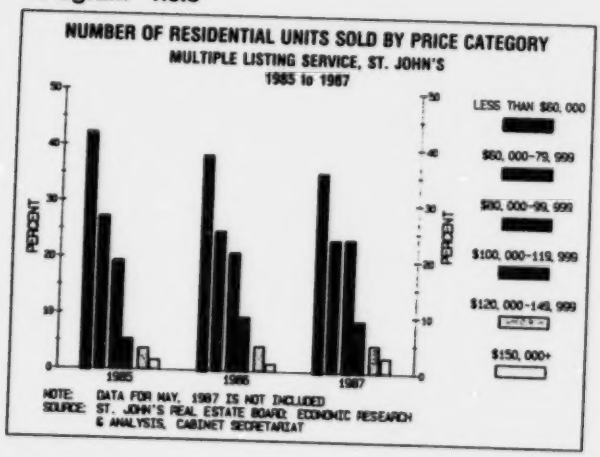
residential property which comprises approximately 90 percent of total real estate sales in the Province.

Diagram V.5.7



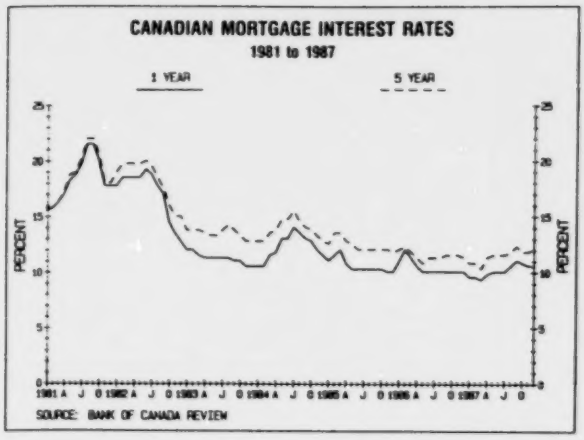
The housing market in the St. John's area is the largest in the Province and, because of the City's role as a major service and goods distribution centre, reflects the level of economic activity throughout the Province. The value of residential housing sales in 1987 in the St. John's area rose by 12.4 percent compared to 1986 to $135.2 million, according to the Multiple Listing Service (MLS). This follows a gain of 9.2 percent in 1986. The 1987 gain in the value of residential sales occurred in the second, third, and fourth quarters as harsh weather conditions in the first quarter caused the number and value of units sold to fall. The volume of residential sales in the St. John's area rose to 1,834 units in 1987, an increase of 7.3 percent from 1986.

Diagram V.5.8



The improved demand for residential dwellings is reflected not only in a higher volume of residential housing sales, but also in a change in the distribution of sales towards the upper end of the market. During 1987, 40.7 percent of total sales was accounted for by sales of houses costing $80,000 or more. This compared with 36.6 percent in 1986 and only 30.3 percent in 1985. Several factors have favoured the upper end of the housing market since 1985. Relatively low mortgage interest rates have reduced the user cost of housing while stability of mortgage rates has removed some of the uncertainty and risk associated with fluctuating interest rates. Furthermore, price increases for houses costing more than $80,000 have been moderate which, when combined with relatively strong growth of personal incomes, has made these units more affordable.

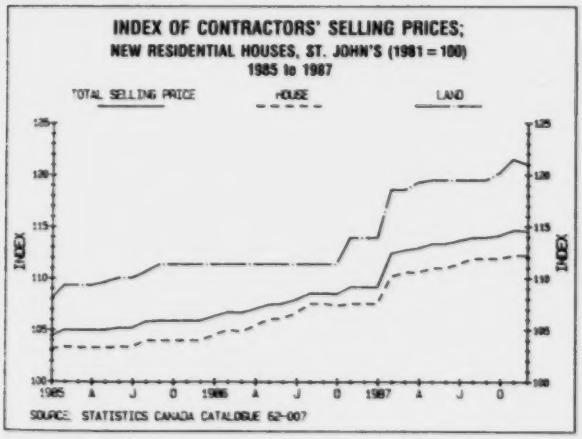
Diagram V.5.9



Mortgage interest rates have been relatively low and stable in the past few years. At the start of the 1981/82 recession, mortgage interest rates peaked at over 21 percent for both one year and five year mortgage terms. Rates have since declined, stabilizing early in 1985, and in most months registered 10 percent or less for mortgages with a one year term and 11.75 percent or less for five year terms. Mortgage interest rates edged upward slightly during the last five months of 1987, however, on a monthly average basis interest rates were 9.85 percent for one year contracts and 11.17 percent for five year contracts.

Price changes in the upper end of the housing market (greater than $80,000) for single dwelling housing units have favoured the purchaser (see Table V.5.16 and The Glossary of Housing Types). Houses selling for less than $120,000 account for the largest percentage of sales in the upper end of the housing market and prices for these houses have not increased substantially since 1986. In the one year period ending October, 1987, the price of houses costing between $80,000 and $99,000 rose by less than one percent whereas the price of houses costing between $100,000 and $120,000 actually fell over this period. Prices for houses above $120,000 have generally fallen as well, the major exception being for condominiums which comprise only a small share of the total market. Most of the weakness in prices during the October, 1986 to October, 1987 period occurred prior to April, 1987. Between April and July of 1987, house prices for all price categories strengthened in response to an increase in demand. This was the first time in two years that price improvements have been broadly based.

Diagram V.5.10



Weak conditions in the aggregate housing market, which is comprised mainly of houses being offered for resale, acted to limit price increases received by contractors for new houses entering the market, as measured by the index of contractors' selling prices. Between 1981 and 1986, contractors' selling prices increased at an annual average rate of less than 1.5 percent. Prices began to increase in November, 1986 due to an increase in the price of land. The upward movement continued in 1987 as a result of further increases in the price of land as well as rising prices for the structure. As a result of the increases throughout the year, the index of total selling prices for new houses averaged 4.9 percent higher than in 1986.

The only group of houses in the St. John's area, other than newly constructed residential units or condominiums, to show relatively strong prices throughout all of 1986 and 1987 have been those which sell for less than $80,000. During the period from January, 1986 to October, 1987, prices in this lower end of the housing market have either been unchanged or have increased each month

TABLE V.5.16

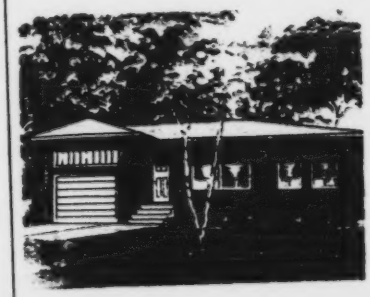
HOUSE PRICES

House Type	Selling Price October 1986	Selling Price October 1987	Percent Change October 1986 to October 1987	Percent Change January to April 1986	Percent Change January to April 1987	Percent Change April to July 1986	Percent Change April to July 1987	Percent Change July to October 1986	Percent Change July to October 1987
Standard Townhouse									
St. John's - East End	49,300	53,000	+7.5	+2.2	+1.6	+1.5	+2.0	+2.3	+2.9
St. John's - West End	46,400	49,100	+5.8	0.0	+2.1	+0.7	+1.7	+2.4	0.0
Mount Pearl	45,600	48,600	+6.5	+0.5	+2.9	+1.8	+1.5	+2.5	+2.3
Detached Bungalow									
St. John's - East End	91,800	92,500	+0.7	+1.0	−1.5	−2.0	+3.7	+0.9	−0.3
St. John's - West End	88,300	88,500	+0.2	+2.5	−0.5	−1.9	+1.6	+0.9	−0.8
Mount Pearl	87,000	87,600	+0.6	+0.3	−0.3	−0.6	+2.8	+0.2	−1.0
Standard Condominium Apt.									
St. John's - East End	91,500	99,500	+8.7	+6.2	+3.7	0.0	+7.1	−0.4	0.0
Standard Two-Storey									
St. John's - East End	118,300	118,000	−0.2	0.0	−2.6	0.0	+3.5	−1.0	0.0
St. John's - West End	115,000	114,800	−0.1	+1.5	−0.7	−1.5	+0.5	0.0	0.0
Mount Pearl	111,800	109,800	−1.7	0.0	−1.1	+0.2	+1.7	−0.8	0.0
Executive Detached Two-Storey									
St. John's - East End	136,000	133,500	−1.8	+0.7	−1.7	0.0	+2.1	0.0	0.0
St. John's - West End	123,700	124,700	+0.8	+2.4	+0.2	−1.5	+1.1	+0.2	0.0
Mount Pearl	119,000	118,000	−0.8	+1.3	−0.3	−0.4	+1.6	+0.4	−0.4
Luxury Condominium Apartment									
St. John's - East End	143,800	165,500	+15.0	+1.8	+8.1	0.0	+6.8	+0.9	0.0

Note: All properties have been considered as being free of debt. Percentage calculations for January to April, April to July and July to October are based upon rounded data.

Source: Royal LePage Survey of Canadian House Prices and Economic Research and Analysis Division, Cabinet Secretariat.

Glossary of Housing Types

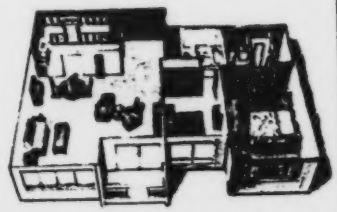


Detached Bungalow

A detached, three-bedroom single-storey home with 1½ bathrooms and a one-car garage. It has a full basement but no recreation room, fireplace or appliances. Using outside dimensions (excluding garage), the total area of the house is 111 sq. metres (1,200 sq. ft.) and it is situated on a full-serviced, 511 sq. metre (5,500 sq. ft.) lot. Depending on the area, the construction style may be brick, wood, aluminum siding, or stucco.

Standard Two-Storey

A three-bedroom, two-storey home with a detached garage. It has a full basement but no recreation room. Using outside dimensions. the total area of the house is 139 sq. metres (1,500 sq. ft.) and it is situated on a fully-serviced, city-sized lot of approximately 325 sq. metres (3,500 sq. ft.). The house may be detached or semi-detached and construction style may be brick, wood, aluminum siding, or stucco.

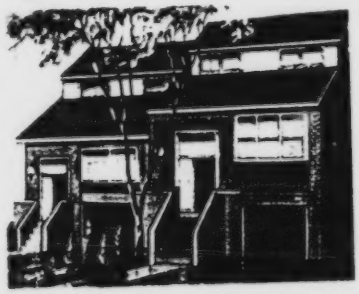


Standard Condominium Apartment

A two-bedroom apartment comprising a living room, a dining room (possibly combined) and a kitchen, in a high-rise building with an inside floor area of 84 sq. metres (900 sq. ft.). Amenities include standard broadloom, 1½ bathrooms, 2 appliances, a small balcony and 1 underground parking space. Common area includes a pool and some minor recreational facilities.

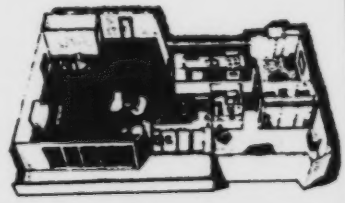
Executive Detached Two-Storey

A detached two-storey, four-bedroom home with 2½ bathrooms, a main floor family room, one fireplace, and an attached two-car garage. There is a full basement but no recreation room or appliances. Using the exterior dimensions (excluding garage), the total area of the house is 186 sq. metres (2,000 sq. ft.), and it is situated on a fully-serviced, 604 sq. metre (6,500 sq. ft.) lot. Depending on the area, the construction style may be brick, wood, aluminum siding, stucco, or a combination like brick and aluminum.



Standard Townhouse

Either condominium or freehold, the townhouse (rowhouse) has three bedrooms, a living room and dining room (possibly combined) and a kitchen. Also included are 1½ bathrooms, standard broadloom, a one-car garage, a full unfinished basement and two appliances. Total inside area is 92 sq. metres (1,000 sq. ft.). Depending on the area, the construction may be brick, wood, aluminum siding or stucco.

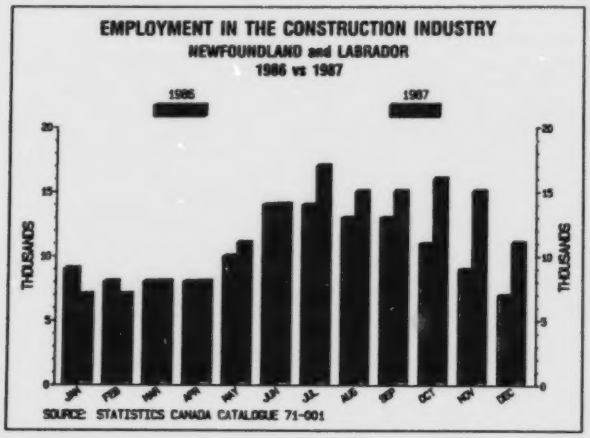


Luxury Condominium Apartment

A two-bedroom apartment comprising a living room, a dining room (possibly combined), and a kitchen, with a family room or den, in a high-rise building with an inside floor area of 130 sq. metres (1,400 sq. ft.). Amenities include upgraded broadloom, 2 full bathrooms, ensuite laundry and storage areas, 5 appliances, a large balcony and 1 underground parking space. Common area includes a pool, sauna and other major recreational facilities.

that the Royal LePage Survey of Canadian House Prices has been carried out. In the one year period ending October, 1987, houses in this price range increased by between 5.8 and 7.5 percent. This strengthening of prices in the lower end of the housing market reflects not only strong demand but also a relatively short supply of houses being offered for sale in this price range.

Diagram V.5.11



Increased construction activity in 1987 generated additional jobs for construction workers. From January to April, 1987, the average number employed dipped below the average level of employment registered during the same months in 1986. In May, however, the number of job opportunities began to rise as construction activity heightened and during each month from July to December the number of workers employed at various job sites throughout the Province exceeded the numbers employed during the same months in 1986 by a significant margin. Most notable was the strong performance of the industry during the fall months when employment typically declines to low levels. In each month from September to December, higher levels of employment were registered in 1987 than during the same months in 1986.

On an a annual average basis, employment in the Construction industry was estimated at 12,000 in 1987, an increase of about 2,000 person years as compared to 1986 and the highest number employed since 1980 when the average level of employment also registered 12,000. Diagram V.5.11 demonstrates, however, that annual average statistics understate the number of jobs provided by the construction industry throughout the year, largely because of the seasonal nature of the industry. In 1987, employment in construction ranged from a low of 7,000 in January and February to a high of 17,000 in July when employment peaked. Furthermore in each month from June to November of 1987, monthly employment exceeded annual average employment.

The outlook for the Construction industry in 1988 is favourable as the level of activity is expected to increase slightly. Anticipated growth in investment expenditures of 4.6 percent (discussed in Section X) will be accompanied by increased expenditures on construction projects. Housing starts are expected to increase by 4.4 percent to 2,800 in 1988 which should result in more residential construction activity. Also, a high level of non-residential and engineering construction is anticipated. Many of the larger projects which will be under construction in 1988 are detailed in Appendix 1 of this report.

V.6 ELECTRIC POWER AND WATER UTILITIES

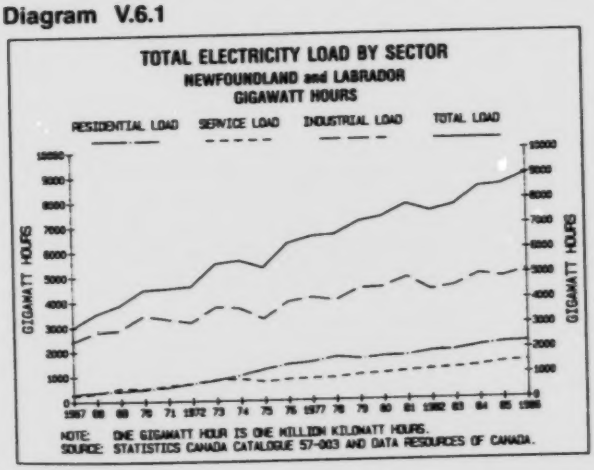
This sector is dominated by the electric power industry which accounts for nearly 98 percent of the GDP generated. The water utilities are establishments primarily engaged in the treatment and distribution of water for the end user. Historically, the contribution of water utilities to GDP has been quite small.

The electric power industry encompasses not only the production of electrical energy but also its distribution to the end user. In 1986, the industry employed roughly 2,400 people and accounted for 16.9 percent of GDP in the goods producing sector and 6.1 percent of total GDP. Electricity in the Province is produced for both domestic consumption and for export. The Province does not import any electricity. The dominant firms in this industry are Newfoundland and Labrador Hydro (Hydro), a Provincial Crown Corporation and Newfoundland Light and Power Company Limited (NewLight), a private corporation whose parent company, Fortis Inc., is headquartered in St. John's.

The demand for electricity is closely linked to economic performance since electrical energy is consumed by all industries and households. Electricity is both an input used in the production of other goods and services as well as a product for final consumption by households. Increased commercial and industrial production generally leads to greater demand for electricity. The increased production, by generating more employment and incomes, will, in turn, lead to increased electricity demand by households and the service sector. Other important demand side factors include the size of the population, the stock and size of residential and non-residential buildings, weather conditions, as well as the price of electricity to the user.

The demand for electricity creates a requirement on the supply side for the generation of a certain amount of electricity referred to as the load. The load is generally measured in terms of power consumption over time (eg. 1,000 watts of power consumed for one hour is a kilowatt hour, 2,000 watts consumed for three hours is six kilowatt hours, and so on). The total load is the sum of the industrial load and the utility load. The industrial load refers to the load resulting from the operation of relatively large industrial enterprises while the utility load is the sum of the service load and the residential load. The service load is comprised of the load of the commercial, public administration and institutional sectors.

Diagram V.6.1



The distribution of the total load among user categories over the past 20 years is illustrated in Diagram V.6.1. The demand for electricity in the Province has grown dramatically over time. Between 1967 and 1986, the total load tripled, growing at an annual average rate of 6.0 percent. Of the three components, the residential load has grown at the fastest rate with an annual average growth rate of 11.0 percent. The service load has grown at an annual average rate of 10.1 percent while the industrial load has grown at a rate of 4.1 percent.

The industrial load accounted for 57.4 percent of the total Provincial load in 1986. Most of this demand was met by Newfoundland and Labrador Hydro which sells power directly to the eight largest industrial users in the Province. These users are currently the Abitibi-Price newsprint mills in Grand Falls and Stephenville, Corner Brook Pulp and Paper Co. Ltd., Wilson and Albright Americas, Newfoundland

Processing Limited, Hope Brook Gold Inc. and the Iron Ore Company of Canada and Wabush Mines in Labrador. The power rates charged to these industrial customers are set by Hydro's Board of Directors and are not subject to regulation.

The residential load accounted for 25.5 percent of total Provincial load in 1986 while the service load accounted for 17.1 percent. This utility load is serviced mainly by NewLight and the Power Distribution District of Newfoundland and Labrador (PDD), a Crown Agency whose affairs are managed by Hydro. Both of these utility companies purchase most of their power from Hydro for distribution to their customers and generate the remainder at their own facilities. The service area of NewLight encompasses all major population centers on the Island as well as some rural areas. The PDD is responsible for providing service to users in other rural parts of the Island and in most of Labrador. On the Island and in Labrador, there is a main electrical grid which links most users to generation stations. Some rural communities which are not connected to the main electrical power grid on the Island or in Labrador receive their power from isolated diesel generation plants operated by the PDD. This agency receives an annual subsidy from the Provincial Government since revenue from customers is not sufficient to cover its high operating costs.

The Board of Commissioners of Public Utilities (PUB) is responsible for regulating power rates (with the exception of Hydro's rates to its industrial customers). The PUB makes a recommendation to the Provincial Cabinet with respect to the rates charged by Hydro and the PDD. The Cabinet must approve these rates prior to implementation. The rate schedules of other firms in the industry are subject to approval by the PUB. Both Hydro and NewLight implemented PUB approved rate stabilization plans in 1986. These plans provided for the elimination of the fuel adjustment charge which had caused significant short term variations in electricity prices due to fluctuations in fuel costs and in the use of thermal generating capacity.

Exports of electric power account for more than 80 percent of the electricity produced in the Province. All power exported is produced at the Churchill Falls hydro-electric generating station in Labrador. The Churchill Falls development, with a total installed capacity of 5,403 megawatts, is the largest hydro-electric facility in Canada and the ninth largest in the world. About 350 megawatts of Churchill Falls power are dedicated for use in Labrador while the remaining capacity is used to generate electricity for export to Quebec. The development is owned by the Churchill Falls (Labrador) Corporation Limited (CFLCo). Newfoundland and Labrador Hydro owns 65.8 percent of CFLCo and Hydro-Quebec owns 34.2 percent. The bulk of the power produced at Churchill Falls is sold to Hydro-Quebec under a long term contract signed in 1969 and not due to expire until 2041. Under the provisions of this contract, power is exported at a fixed price which is now far below market value and which will actually decline over the term of the contract.

Hydro generates enough electricity on the Island to supply about three-quarters of the total load on the main electrical grid. Most of the remainder is produced by NewLight, Deer Lake Power Company (supplying Corner Brook Pulp and Paper), and Abitibi-Price (Grand Falls Division). Hydro produces about 75 percent of its power from hydro-electric facilities and the remainder from thermal generation facilities. NewLight generates some electricity at its thirty small generating plants while Deer Lake Power Company and Abitibi-Price meet a part of their power requirements from their own facilities.

There are no major hydro-electric sites likely to be developed on the Island in the near future, due to both cost and environmental considerations. There is, however, a substantial amount of untapped hydro-electric potential in Labrador. The most promising options for future development include a 1,698 megawatt facility at Gull Island and a 618 megawatt facility at Muskrat Falls. Both of these sites are located along the Lower Churchill River.

The total Provincial load, which reached a record high in 1986, grew by about 0.3 percent in 1987. The increase was broadly based with growth experienced in residential, service and industrial loads. The total load declined slightly in Labrador because of reduced usage by the iron ore in-

dustry. This was offset, however, by an increase in total Island load. Employment in the industry was stable in 1987 at about 2,400.

Increased sales were recorded by both Hydro and NewLight in 1987. The volume of electricity sold by NewLight grew by 2.7 percent, due in large part to an increase in both the total number of customers and the proportion of households using electricity as their primary source of space heating.

The price of electricity was stable throughout most of 1987. Hydro did not alter its wholesale rates to utility customers during the year because of favourable balances in its Rate Stabilization Plan. NewLight implemented an average rate increase, which was approved by the PUB, of 2.1 percent on November 12, 1987. The company had requested an average rate increase of 2.4 percent during 1987 as it was denied an increase in 1986.

Capital expenditures in the electric power industry registered a large increase in 1987. Hydro increased its capital expenditures by 39.2 percent to $36.9 million. Major projects carried out by Hydro included construction work on the interconnection of Burgeo, Fogo and Change Islands to the main electrical power grid. In addition, a power line to the Hope Brook gold mine was completed. Capital expenditures at NewLight increased by 21.8 percent to $39.1 million in 1987.

Strong growth in the consumption of electricity is forecast for 1988 with the total Provincial load expected to increase by about 7.0 percent. Most of this growth will be due to increased requirements by the industrial sector along with moderate growth in the residential and service loads. The expected growth in the industrial load is mainly attributable to the strong economic performance that is anticipated in the goods producing industries. As well, companies which operated for only a part of 1987 such as Hope Brook Gold Inc., Newfoundland Zinc Mines Limited and Newfoundland Processing Limited, are expected to experience a full year of operation in 1988 creating increased demand for electricity. Both Hydro and NewLight are expected to experience continued growth in sales volumes in 1988 due to the anticipated increase in the total load. Employment in the electric power industry is likely to remain at about the same level as in 1987.

Capital expenditures in the electric power industry will increase considerably in 1988 for the second consecutive year. Hydro will spend about $127 million on capital projects, more than triple the amount spent in 1987. The three main generation related projects include the Paradise River hydro generating plant (8 megawatts), the upgrading of two thermal units at Holyrood (40 megawatts) and a wood-chip thermal generation plant at Roddickton (5 megawatts). Construction will also begin on a new corporate headquarters and energy management center, both of which will be completed in 1990 at a combined cost of $40 million. In addition, the Fogo and Change Islands interconnections will be completed by the end of 1988 and this will mean lower electricity rates for the customers living there. Capital expenditures at NewLight are expected to increase by 27.9 percent to about $50 million in 1988 with the largest project being the start of construction on a new regional office, warehouse and service facility in St. John's. (For more details on these and other major projects see Appendix 1).

The wholesale rates which Hydro charges its utility customers are not expected to increase in 1988 because several factors have enabled Hydro to keep its costs down. Conditions in financial markets have a significant bearing on costs since about 40 percent of Hydro's operating expenditures are directed towards the servicing and repayment of debt. Lower interest rates have enabled Hydro to refinance some of its debt at a lower interest expense. The appreciation of the Canadian dollar has also helped keep costs down since a one cent appreciation of the Canadian dollar against the United States dollar reduces Hydro's debt serving costs on its United States dollar denominated debt by $250,000 annually. As well, since oil is normally priced in United States dollars, a one cent appreciation of the Canadian dollar reduces Hydro's expected fuel costs by $500,000.

Generation projects currently being developed on the Island, combined with those already in place, are not expected to be sufficient to meet projected demand by the early 1990s. Therefore, a

decision will have to be made within the next year or so on what new energy sources will be developed. The most desirable means of meeting the Island's long-term energy requirements is through a power infeed from Labrador, across the Strait of Belle Isle, connecting the Island's main electrical grid to a large hydro-electric facility in Labrador, preferably Churchill Falls. Although the Province has held discussions with Quebec in an effort to secure additional power from CFLCo, no agreement has yet been reached on this matter. Legal proceedings began in 1976 in an effort to recall 800 megawatts of power from the Churchill Falls facility for use by the Province. To date, the legal route has not met with much success; however, in 1988 the Supreme Court of Canada will hear an appeal of the case by the Provincial Government. An alternative option to Churchill Falls power is the development of the Gull Island or Muskrat Falls sites, however, this option involves the production of power which is surplus to the Province's needs. The marketing of this surplus power to, or through, Quebec is an unresolved issue as is the development of hydro power along rivers that have their headwaters in Labrador but which pass through Quebec. The Province and Quebec have recently resumed discussions, with the involvement of the Prime Minister of Canada, in an effort to resolve these outstanding issues. A successful resolution would be of enormous benefit to the economic development of the Province, enabling it to capture both the benefits of a large construction project and the benefits of a long-term stream of reliable hydro-electric power at a stable price.

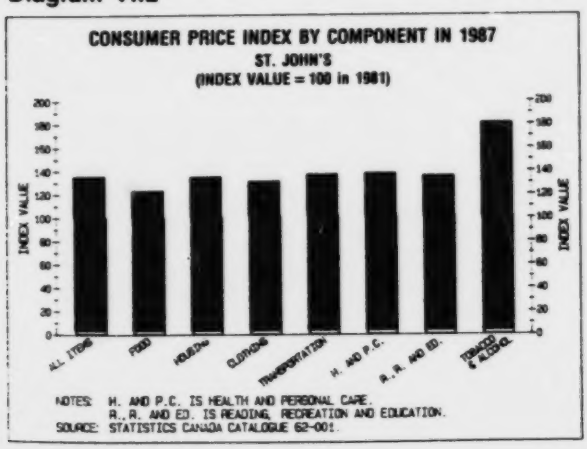
VI. INFLATION

The inflation rate in Canada has fallen considerably from the pre-recessionary highs recorded in the early 1980s. Much of this decline can be attributed to the Bank of Canada which tightened monetary policy in 1981 resulting in a sharp increase in interest rates and a severe recession in 1981-1982. As firms and workers responded to the economic slowdown by reducing their demands for price and wage increases, the rate of inflation in Canada, as measured by the Consumer Price Index, declined to the four to six percent range by 1984. At the same time, interest rates had declined and economic activity increased. Expectations of future inflation had diminished, however, and this was accompanied by slower growth in the wage rates demanded by labour and in the prices charged by firms. The path of inflation, for both Canada and St. John's is illustrated in Diagram VI.1. Statistics Canada does not produce estimates of the Consumer Price Index for any other parts of the Province.

Diagram VI.1

The Consumer Price Index, or rather changes in the index, is the most commonly used indicator of inflation. The Consumer Price Index (also called the all-items index) has seven main components which reflect the pattern of consumer expenditures. For Newfoundland and Labrador, the distribution of consumer expenditures among commodity groups for a 'representative' family is provided in Table IX.1 of this report. The components of the CPI are illustrated in Diagram VI.2. The price indexes for these seven groups of commodities tend to change at different rates and the factors which influence price changes tend to differ by commodity group. The impact of a change in the price of an individual commodity on the Consumer Price Index depends upon the importance of the commodity in total consumer expenditure. If, for example, gasoline accounted for two percent of total consumer expenditures, then two percent of any gasoline price change would be reflected in the change in the all items Consumer Price Index.

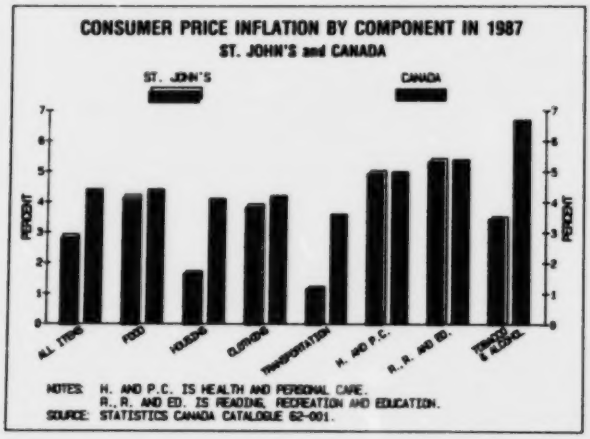
Diagram VI.2



Canada's Consumer Price Index increased by 4.4 percent in 1987, on an annual average basis, compared to 4.1 percent in the previous year. The strongest price increases in 1987 were recorded for tobacco and alcohol products; reading, recreation and education products; and health and personal care products. Higher indirect taxes as well as a booming economy in southern Ontario were major factors contributing to the increases. Of the eighteen cities for which Statistics Canada publishes a price index, Toronto had the highest inflation rate in the Country in 1987 at 5.6 percent followed by Regina and Saskatoon at 4.9 percent. St. John's boasted the second lowest inflation rate in the country at 2.9 percent.

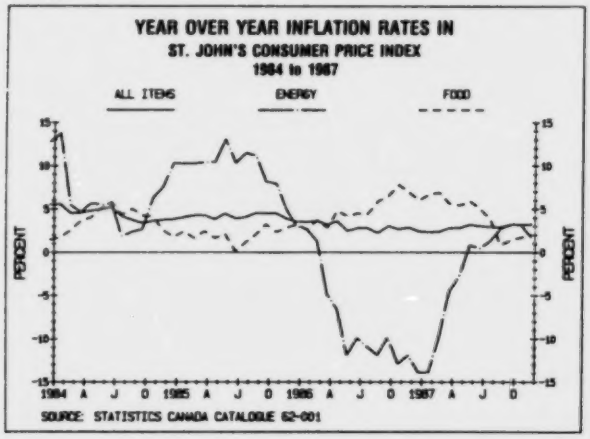
Price increases in St. John's were concentrated mainly in health and personal care products and recreation, reading, and education products. These two components increased by 5.0 percent and 5.4 percent respectively in 1987. As Diagram VI.3 indicates, all seven of the main components of the St. John's CPI experienced increases less than or equal to the national average. Price increases for housing, transportation, and tobacco and alcohol products were significantly lower than the national average. Nevertheless, as both Diagram VI.2 and VI.3 indicate, price increases for tobacco and alcohol have outstripped price increases in other categories by a wide margin, mainly because of increased indirect taxes on these products.

Diagram VI.3



Food and energy prices are two of the more volatile components of the Consumer Price Index as Diagram VI.4 illustrates. The sharp decline in oil prices which occurred during 1986 meant declining energy prices on a year-over-year basis through part of 1987. As oil prices stabilized and moved higher during 1987, the energy index increased on a year-over-year basis. Food price inflation began 1987 in the six to seven percent range but it fell considerably to 0.8 percent in September and ended the year at 2.0 percent.

Diagram VI.4


YEAR OVER YEAR INFLATION RATES IN
ST. JOHN'S CONSUMER PRICE INDEX
1984 to 1987
ALL ITEMS
ENERGY
FOOD
PERCENT
1984 A J O 1985 A J O 1986 A J O 1987 A J O
SOURCE: STATISTICS CANADA CATALOGUE 62-001

In 1988, Canada's inflation rate is expected to decline slightly to about 4.1 percent on an annual average basis. This reduction will, in part, be attributable to slower economic growth which will restrain the pace of wage and price increases. Also, food prices are expected to show much lower increases in 1988 than in the previous year and the appreciation of the Canadian dollar against the United States dollar will hold down import prices.

In St. John's, the inflation rate in 1988 is expected to increase slightly to 3.2 percent. In part, this increase represents a 'catch-up' effect as price increases for many goods in St. John's have not kept pace with those at the national level. The inflation rate in St. John's, however, will continue to be less than the national rate in 1988.

VII. EMPLOYMENT AND THE LABOUR FORCE

Employment in Newfoundland and Labrador increased by 5,000 in 1987 on an annual average basis marking the second consecutive year of strong employment gains. Furthermore, since some of the increased employment in 1987 was part-year, this 5,000 annual average gain in employment resulted in the creation of many more than 5,000 jobs in the Province. The employment gains brought the unemployment rate down by 1.4 percentage points to 18.6 percent, the lowest level recorded in five years. Furthermore, the 1987 decline in the Province's unemployment rate was the largest absolute decline recorded for any Canadian province.

Diagram VII.1

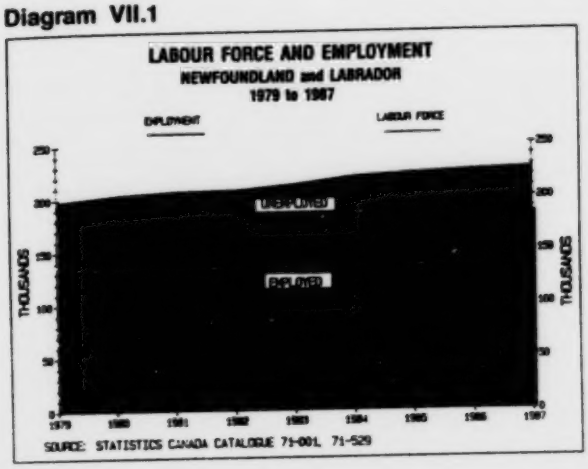
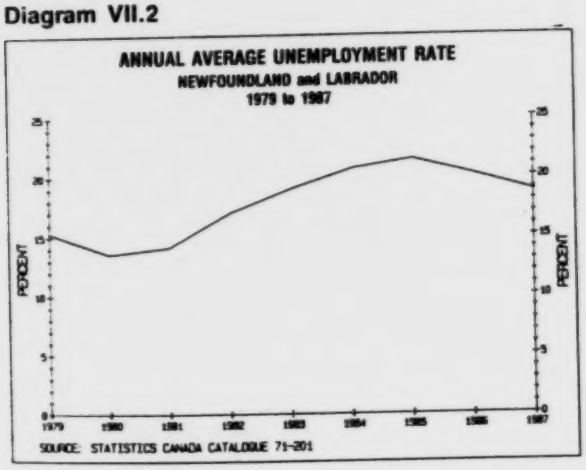
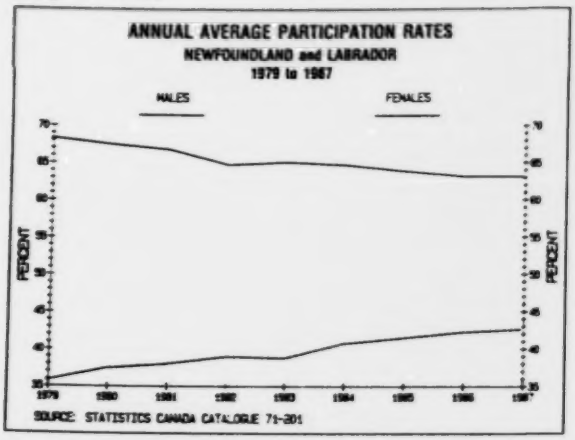


Diagram VII.2



The period from 1979 to 1985 was one of slow employment growth and rising unemployment rates. As illustrated in Diagram VII.1, employment grew over the period from 1979 to 1981 and then fell in 1982. Since 1982 growth in employment has been slow but steady. The annual average growth of employment from 1979 to 1985 was 0.6 percent. During the same period the labour force grew steadily at an annual average rate of 1.9 percent. Because labour force growth exceeded employment growth, the unemployment rate rose steadily as Diagram VII.2 demonstrates. In 1979 the unemployment rate was 15.1 percent, fell to 13.3 percent in 1980 and increased steadily to 21.3 percent in 1985. In 1986, this trend was reversed as employment in Newfoundland and Labrador increased by 5,000 on an annual average basis. This was the first substantial increase in employment recorded since 1981 when employment stood at 179,000. Diagram VII.1 demonstrates that in 1986, for the first time in six years, growth in employment exceeded growth in the labour force and subsequently the unemployment rate fell 1.3 percentage points to 20.0 percent. Strong economic growth continued in 1987 causing employment to rise and the unemployment rate to fall by a further 1.4 percentage points to 18.6 percent in 1987.

Diagram VII.3



Examination of the participation rates for males and females aids in understanding what occurred over the period. Diagram VII.3 shows that the number of women entering the labour force increased dramatically as the participation rate rose from 35.9 percent in 1979 to 41.8 percent in 1985 and 43.0 percent in 1987. The annual average increase in the participation rate for women between 1979 and 1987 was 2.3 percent. At the same time the male participation rate fell as Diagram VII.3 shows. The participation rate declined by 1.0 percent annually. The annual average size of the labour force increased by 29,000 between 1979 and 1987; there were 4,000 more men and 25,000 more women in the labour force.

Table VII.1

ANNUAL AVERAGE LABOUR FORCE INDICATORS

Year	Participation Rates %	Labour Force (000's)	Employment (000's)	Unemployment Rate %
1979	52.3	200	170	15.1
1980	52.7	205	178	13.3
1981	52.6	208	179	13.9
1982	52.1	209	174	16.8
1983	52.1	214	174	18.8
1984	52.9	221	176	20.5
1985	53.0	224	176	21.3
1986	53.0	226	181	20.0
1987	53.1	228	186	18.6

Source: Statistics Canada 71-529, 71-001.

The Labour Force Survey on which Table VII.1 above is based is conducted monthly and provides a 'snapshot' of annual average labour force activity such as employment during the year. For example, the number of people employed in the Province varies from month to month, particularly in seasonal industries. The Labour Force Survey adds together the monthly employment figures from January to December to determine the total number of person months of employment. This total, which may be thought of as the labour effort, is then averaged over the twelve months of the year to give an annual average profile of employment.

While the Labour Force Survey provides useful information regarding the amount of labour effort required in the economy, its limitations must be understood. By way of example, it provides

only limited information about the number of people who held jobs for some period of time during the year or the number of people who actually participated in the labour force at different times. The population of labour force age represents the pool of both people and skills upon which employers within the Province can draw to meet present and future workforce requirements. In other words, it represents all potential labour force participants. The actual numbers of people participating and the extent of their labour force activity are obscured in the annual averaging process.

As indicated in Table VII.1 above, the annual average participation rate in 1987 was 53.1 percent. This means that of the 430,000 people in the Province of labour force age (all those persons 15 years of age and older), an annual average of 53.1 percent of these people or 228,000 participated in the labour force and experienced either employment or unemployment or both. If in fact more than 228,000 people actually participated in the labour force during 1987, this would not even be indicated by the monthly labour force statistics. The average of 228,000 person years spent in the labour force during 1987 was not necessarily representative of the total number of people who entered the labour force during the year to seek employment and who were either employed or unemployed.

While annual average labour force statistics provide useful information for some purposes, particularly in assessing the changing requirement for labour effort, they mask the complex and dynamic nature of this important element of the Newfoundland and Labrador economy. People are continually moving into and out of the labour force and between states of employment and unemployment. Much of this activity is hidden when only annual average labour force data is examined.

In addition to the monthly Labour Force Survey on which annual average statistics are based, Statistics Canada conducts an Annual Work Patterns Survey. This survey attempts to capture labour force activity in terms of the actual number of people, rather than the annual average number of people, who participated in the labour force and were either employed or unemployed (or both) for some period of time during the year. Data from this survey together with data from the Labour Force Survey are provided in Table VII.2 below for 1985, the most recent year for which comparable data are available.

Table VII.2

NUMBER OF PERSONS IN THE LABOUR FORCE WHO WERE EITHER EMPLOYED OR UNEMPLOYED AT SOMETIME DURING 1985

	Persons in the Labour Force (000's)	Persons Employed (000's)	Persons Unemployed (000's)	Population of Labour Force Age (000's)
Annual Average	224	176	48	422
Labour Force Experience	286	267	114	422

Source: Statistics Canada 71-001 (annual averages) and The Annual Work Patterns Survey, Statistics Canada, March, 1986.

The Annual Work Patterns Survey does not provide a picture of labour effort which is different from that given by the monthly Labour Force Survey. It does, however, provide a more informative picture of how that effort is met, and the degree of success being met by people's job search activities. During 1985, some 286,000 people representing 68 percent of the population of labour force age participated in the labour force for some period; the average number of people

participating was 224,000 or 53 percent. Furthermore, of the 286,000 people who entered the labour force in search of a job during 1985, 93.4 percent or 267,000 were successful. Clearly, the number of jobs obtained in the course of a year is very different from the annual average number of person years which account for total labour effort.

During 1985 annual employment totalled 176,000 person years. At the same time, however, some 267,000 people actually found work during the year and, on average, jobs lasted nearly 31.3 weeks, or nearly two-thirds of the year. Of course, some jobs would be seasonal whereas others would last a full year. While 114,000 people experienced some period of unemployment during 1985, the average duration of unemployment was about 8.3 weeks. The balance of approximately 12.4 weeks was spent outside the labour force. Furthermore, only 6.6 percent of labour force participants (or 19,000 people) were unsuccessful in finding any employment whatsoever. The number of people experiencing periods of unemployment during 1985 corresponds closely with the number of people receiving Unemployment Insurance, which serves to reduce the hardship associated with unemployment.

In terms of comparison with the country as a whole, 96.1 percent of Canadians who entered the labour force in search of a job found employment during 1985 as opposed to 93.4 percent in Newfoundland. The key difference, of course, is the average length of employment; 40.6 weeks in Canada compared to 31.3 weeks in Newfoundland.

There are many complex factors which influence the composition of the labour force over time and which lead to the dynamic nature of this important element of the economy. Only one year of labour force activity has been briefly examined here although important changes in the structure and composition of the labour force have occurred in recent years. These changes have important implications for the future size, age and skill structure of the labour force and a more detailed examination of these changes was provided in a special report at the end of THE ECONOMY 1987.

In 1986, almost all employment gains accrued in the first six months of the year. During that six month period, monthly employment averaged nearly 10,000 higher than the annual average for 1985. The result was an annual average increase in employment of 5,000 in 1986. During the first six months of 1987, indicators of labour market activity in the Province, including employment and the unemployment rate, were almost unchanged from the same period in 1986. This, nevertheless, represented a strong performance since the exceptional employment gains that occurred in the first half of 1986 were maintained in the first half of 1987. During the last six months of 1987, employment averaged 10,000 higher than the annual average employment for 1986, bringing the annual average gain in 1987 to 5,000 additional person years of employment.

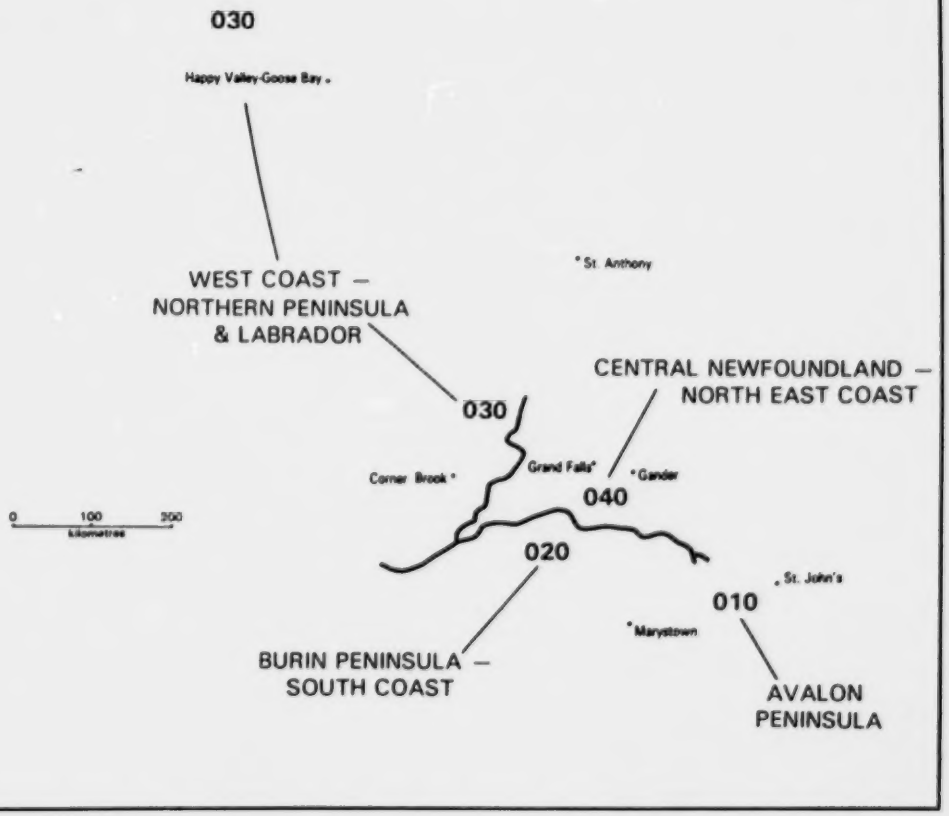
Labour market statistics for the four statistical areas of the Province, as illustrated in Map VII.1, indicate that labour force performance varied throughout the Province during 1987. The unemployment rate declined in all areas of the Province in 1987 with the largest decline, 3.9 percentage points, recorded in area 020. In this area, the unemployment rate has declined by 6.2 percentage points in the past three years and in 1987, the unemployment rate along the Southeast Coast, at 17.3 percent, was well below the unemployment rate for the Province as a whole. In area 030, traditionally an area of high unemployment in the Province, the unemployment rate has declined by 3.0 percentage points since 1985 while the numbers employed have risen from 36,000 in 1984 to 43,000 in 1987, an increase of 19.4 percent over the period. The gains in employment in this area of traditionally high unemployment have surpassed those of any other area of the Province; these improvements may be partly attributable to enhanced tourist attractions along the Great Northern Peninsula and increasing levels of tourist activity in the Province. Declines in the unemployment rate over the past three years, though not as large as in areas 020 and 030, have also been recorded in areas 010 and 040. Overall, recent improvements in employment and the unemployment rate in the Province have been fairly broadly based with all areas of the Province benefiting from increased levels of economic activity.

MAP VII.1

Labour Force by Statistical Area in Newfoundland and Labrador
1987 Annual Average ('000)

	Labour Force	Population Labour Force Age
Area 010	107	189
Area 020	20	41
Area 030	56	95
Area 040	45	105

Source: Statistics Canada 71-001



Labour force and employment statistics for males and females during 1987 reveal that changes in labour force activity also varied by age and sex. For females, labour force and employment gains were concentrated in the 25-34 and 35-44 year age categories. Declines in the labour force occurred for the 15-19 and 20-24 year age groups. The level of employment remained the same for all other age groups. For males, the strongest labour force growth was observed in the 25-34 and 35-44 year age group while the strongest employment gains were realized in the 15-19 and 35-44 year age groups. The only decline for males, in both labour force and employment, was observed in the 55-64 year age group. Overall, the labour force for males was unchanged while the female labour force increased by 2,000. Employment gains for males were greater than females by approximately 1,000.

Diagram VII.4

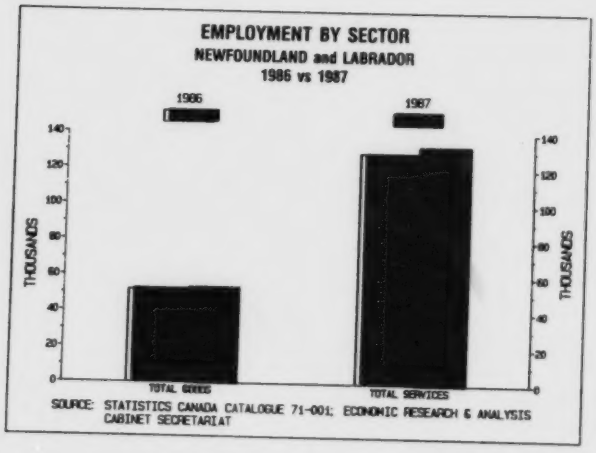


Diagram VII.4 compares labour market activity by sector during 1987 with activity in 1986 and reveals that employment gains in the service sector outpaced those in the goods producing sector. An annual average of about 3,000 more persons were employed in the service sector during 1987 compared to the previous year. For the goods producing sector, an annual average of about 2,000 more persons were employed in 1987.

Employment in the primary industries grew by approximately 1,000 in 1987. Growth resulted from improved performance by minerals producers, as well as historically high levels of minerals exploration in the Province. Increased pulpwood production and a much expanded silviculture program also provided additional jobs. The slight decrease in employment in the manufacturing industry resulted from a reduced volume of fish landings in some parts of the Province and consequently reduced employment in the manufacture of fish products. Approximately 2,000 additional jobs were recorded in the construction industry. Annual average employment of 12,000 person years in 1987 was the highest level of employment recorded in the industry since 1980.

Diagram VII.5

Gains in service sector employment were attributable to strong performances by the Trade (Wholesale and Retail) and Services (Community, Business and Personal) industries. Continued growth in the Province's goods producing sector and higher levels of tourism activity, in combination with low levels of inflation and real increases in wages and salaries, stimulated consumer spending. The increased consumer spending was the driving force behind employment growth in the Trade and Service industries, two of the Province's largest employers. Employment in the Trade industry was at its highest level in over twelve years. Furthermore, as a result of the strong economic growth experienced during the past two years businesses have begun to hold

their workers for longer periods of time resulting in an improvement in the duration of employment. In 1987, seasonal fluctuations in employment were small relative to earlier years. Employment in the service industries was also at the highest levels recorded for over a decade.

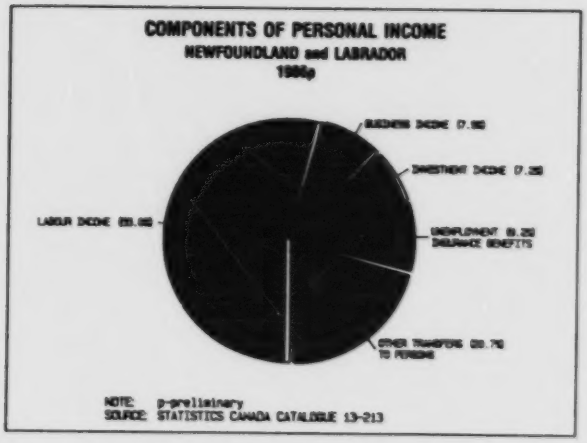
Continued improvement is expected during 1988 in both the level of employment in the Province and the unemployment rate. The year began on an optimistic note and in the first two months of 1988, the monthly average number of people employed, on a seasonally adjusted basis, was up by 11,500 compared with the monthly average for the first two months of 1987. On the same basis, the monthly average unemployment rate declined by 1.3 percentage points. By year end, the annual average level of employment in the Province is expected to rise by 4,000 while the unemployment rate could fall to 17.4 percent .

VIII. PERSONAL INCOME

Personal income, which measures the total income accruing to all individuals resident in the Province, was estimated at $7,088 million in 1987, an amount which exceeded the value of Gross Domestic Product by nearly eight percent. This represents a substantial cash flow through the economy of Newfoundland and Labrador. The amount of personal income available for consumption within the Province is a major determinant of the level of economic activity. It is also a major determinant of the standard of living which residents of the Province can enjoy. The amount of tax revenue which is available to Government for expenditure on public goods such as education, health and transportation systems is also influenced by both the level and distribution of personal income.

Personal income has the following components: labour income, business income, investment income and Unemployment Insurance benefits and other types of transfer income. The relative importance of these components to total personal income is illustrated in Diagram VIII.1 for 1986.

Diagram VIII.1



Labour income consists mainly of total wages and salaries received by all workers in the Province. The level of total wages and salaries in the Province is primarily determined by the number and type of jobs, the duration of jobs and the rates of pay. In the past, total employment and total real labour income have generally moved in the same direction.

Transfer payments to individuals represent the second largest component of personal income in the Province and include such items as Unemployment Insurance benefits, social assistance, family allowances, pensions and old age security payments. Some components of transfer income, such as family allowances and old age security payments, are primarily related to demographic and social factors, while others, such as Unemployment Insurance payments, are related to employment and the level of economic activity in the Province.

Many residents of the Province derive a large part of their income from the ownership of business property. The business income component of personal income includes the net income of unincorporated businesses, including rental income, as well as the net income of farm operators from farm production. Unincorporated business income includes the earnings of self-employed fishermen and professsional practitioners such as doctors and dentists as well as the earnings of most small businesses.

Investment income is generated by the accumulated savings of households that are held in the form of financial assets. These financial assets include money held in savings and term deposits at financial institutions, as well as stocks and bonds. Investment income is comprised of the interest and dividend payments generated by these financial assets.

The numerical values of the personal income components are provided in Table VIII.1. During every year from 1981 to 1987 real gains were recorded in total personal income as growth in the nominal dollar value exceeded the rate of inflation. The purchasing power of total personal income grew at an annual average rate of 2.6 percent between 1981 and 1987. Periods of employment losses such as 1982 and 1983 were met with declines in real labour income and, in some cases, invest-

ment income as workers were forced to expend savings in an effort to maintain their standard of living. In both of these years, losses in labour income were more than offset by an increased rate of growth in transfer income. This is to be expected as some types of transfer payments, such as Unemployment Insurance and social assistance, are designed to automatically stabilize income levels by counteracting decreases in labour income. The increased cash flow during the worst recession in recent history clearly benefited businesses in the Province as retail sales rose by 4.8 percent in real terms in 1983, a year in which both labour and investment income declined. After 1983, as economic conditions in the Province improved, labour income grew in real terms and the rate of growth in transfer income slowed considerably from the recession period. Much of the continued growth in transfer payments came from Unemployment Insurance benefits as rapid growth in the labour force continued to put upward pressure on the unemployment rate.

Table VIII.1

PERSONAL INCOME BY COMPONENT ($ millions)
NEWFOUNDLAND AND LABRADOR 1981 TO 1987

	1981	1982	1983	1984	1985	1986	1987e
Personal Income	4,497	5,045	5,465	5,773	6,187	6,600	7,088
% Change	14.4	12.2	8.3	5.6	7.2	6.7	7.4
% Change (Real)	0.9	2.0	1.4	1.2	2.9	3.6	4.4
Labour Income	2,709	2,951	3,076	3,256	3,445	3,627	3,907
% Change	13.4	8.9	4.2	5.9	5.8	5.3	7.7
% Change (Real)	0.0	-1.0	-2.4	1.4	1.6	2.2	4.7
Business Income	237	288	344	400	451	523	553
% Change	9.2	21.5	19.4	16.3	12.8	16.0	5.7
% Change (Real)	-3.7	10.5	11.8	11.4	8.3	12.6	2.8
Interest, Dividends, and Miscellaneous Investment Income	335	376	358	392	438	473	500
% Change	44.4	12.2	-4.8	9.5	11.7	8.0	5.7
% Change (Real)	27.4	2.0	-10.9	4.9	7.3	4.9	2.7
Unemployment Insurance Benefits	289	379	455	493	548	610	646
% Change	10.7	31.1	20.1	8.4	11.2	11.3	5.9
% Change (Real)	-2.3	19.2	12.4	3.8	6.7	8.1	2.9
Other Transfer Income	927	1,051	1,232	1,232	1,305	1,367	1,482
% Change	11.6	13.4	17.2	0.0	5.9	4.8	8.4
% Change (Real)	-1.6	3.1	9.7	-4.2	1.7	1.7	5.4

(1) e = estimate

(2) Labour income includes: wages & salaries, supplementary labour income & military pay & allowances.

(3) Business income consists of net income of farm operators from farm production and net income of unincorporated businesses including rent.

(4) Other transfer income is mainly comprised of payments from governments to individuals in the form of family and youth allowances, old age security payments, etc.

(5) Some of these definitions are not comparable to those used in The Economy 1987. Also, Statistics Canada has made a major historical revision to their income data since publication of that document

Source: Statistics Canada, Provincial Income and Expenditure Accounts 1961-1986 and Economic Research and Analysis Division and Newfoundland Statistics Agency, Cabinet Secretariat.

The growth pattern of individual components of personal income during the 1980s has been consistent with general economic trends and government policy direction throughout the period. Labour income increased dramatically in 1981 due to a combination of high wage settlements related to double digit inflation and strong employment gains in 1980 which carried through to 1981. Labour income declined in real terms during 1982 and 1983 due to the sharp decline in employment associated with the recession. Labour income growth improved in real terms from 1984 to 1987 as gains were recorded in both employment and GDP.

Both business and investment income experienced rapid growth in the 1980s. Between 1981 and 1987, business income more than doubled. Investment income experienced a substantial increase in 1981 due to record high interest rates, however, in 1983 earnings from investments declined in real terms due to lower interest rates and increased unemployment. Increased unemployment forced many individuals to liquidate their investment funds in order to offset losses in earned income. This trend reversed itself in the period 1984 to 1987 as general economic conditions improved and interest rates stabilized.

Transfer income, including Unemployment Insurance benefits, increased dramatically in 1982 and 1983 in response to rising levels of unemployment. Some of the growth in transfer income from sources other than Unemployment Insurance can be attributed to automatic inflation indexing of federal programs, and to the general economic recession which peaked in 1982 and 1983. The growth rate of these transfers was much slower after 1983 in response to government expenditure restraint, improved economic conditions in the Province and demographic factors. Unemployment Insurance benefits grew more slowly after the recession as employment conditions began to improve.

Personal income grew by 7.4 percent in 1987, or 4.4 percent in real terms, the highest recorded real growth rate since 1977. All of the main components of personal income increased in 1987. Labour income grew by 7.7 percent or 4.7 percent in real terms. This increase resulted mainly from the 2.8 percent growth in total employment in 1987 and an increase of about 3.4 percent in average weekly earnings. Also, the fact that there were fewer workdays lost due to strikes meant that less labour income was lost in 1987 than in the previous year. The total number of workdays lost due to strikes and lockouts fell from 229,705 in 1986 to 64,382 in 1987. The number of workers involved in work stoppages in 1987 was 4,770.

Improved employment conditions were accompanied by a slowdown in the growth of unemployment insurance benefits. These benefits grew by 5.9 percent in 1987 in contrast to annual growth in excess of eight percent in the 1981-86 period. Other transfer income grew by about 8.4 percent in 1987. Old age security payments and payments under the Canada Pension Plan recorded strong growth during the year as the population of retirement age continued to increase.

Total personal income is expected to grow by about 4.5 percent in 1988 due mainly to continued economic growth and anticipated gains of 4,000 person years of employment. The current dollar value of personal income should reach $7.4 billion in 1988. Personal disposable income, which is essentially personal income after payment of personal direct taxes (mostly income taxes), is expected to rise at a somewhat faster pace than personal income in 1988 because of the implementation of Stage 1 of tax reform. Stage 1 provides for an expansion of the income tax base and a lowering of marginal tax rates with the combined effect being a reduction in the total income taxes collected. Although Stage 1 became effective on January 1, 1988, income tax deductions from payrolls will continue at the former tax rates until June 30, 1988. Thereafter, lower tax rates will apply and personal disposable income will increase as a result. As well, higher tax refunds can be expected in 1989 as a result of higher than required tax deductions in the first half of 1988.

IX. CONSUMER SPENDING

Personal consumption expenditures within the Province make a significant contribution to the local economy. This is because the purchase of goods and services in the Province generates income and employment for local producers and distributors. The final contribution of expenditures to the domestic economy varies with the degree to which the items purchased are produced locally.

Table IX.1 outlines the distribution of consumption expenditures by type of product for a 'representative' Newfoundland family in 1982, the most recent year for which detailed data are available. The table indicates that the largest component of consumption expenditures was food which accounted for 26.1 percent. In order of importance, food was followed by shelter, transportation, and clothing.

Table IX.1

DISTRIBUTION OF CONSUMPTION EXPENDITURES BY TYPE FOR A REPRESENTATIVE NEWFOUNDLAND FAMILY IN 1982

Category of Expenditure	Percentage of current consumption
Food	**26.1**
Shelter	**17.0**
Principal Accommodation	16.0
Rented	3.2
Owned	6.4
Water, Fuei and Electricity	6.4
Other Accommodation	1.0
Household Operation	**6.7**
Household Furnishings and Equipment	**5.0**
Household Furnishings	2.6
Household Equipment	2.1
Services	0.1
Clothing	**9.6**
Transportation	**15.3**
Private Transportation	14.0
Public Transportation	1.4
Health Care	**2.0**
Personal Care	**2.6**
Recreation	**5.4**
Reading Materials and Other Printed Matter	**0.6**
Education	**0.7**
Tobacco Products and Alcoholic Beverages	**6.0**
Miscellaneous	**3.0**
TOTAL	100.0

Note: Percentages may not add to total because of rounding error. There were 465 families in the sample with the average size being 3.68 persons.

Source: Statistics Canada catalogue 62-555.

The most important factors determining the level of consumer spending by residents of the Province are personal disposable income (essentially personal income net of income tax), consumer confidence and interest rates. Personal consumption expenditures tend to rise with personal disposable income. Also, as consumer confidence improves, or credit becomes cheaper and easier to obtain, people tend to spend a higher proportion of their personal disposable income. In other words, the rate of saving out of personal disposable income (i.e., the personal savings rate) decreases. Variations in spending by non-residents (mainly tourists) also affect the level of consumer spending in the Province.

Several factors contributed to the strong growth in consumer spending in Newfoundland and Labrador during 1987. Gains in personal income exceeded inflation by 4.4 percent and this led to increased personal disposable income and hence consumer purchasing power. Also, consumer confidence rose in 1987 as economic conditions improved over the previous year while inflation and interest rates were fairly stable. This contributed to increased consumer spending as the personal savings rate declined and the level of consumer borrowing increased. The average level of personal loans held by chartered banks in the Province increased by 11.7 percent in the first three quarters of 1987 compared with the same period in 1986. At the end of the third quarter, total personal loans held by the chartered banks stood at $1,006 million, an increase of $110 million from a year earlier. Increased tourism in the Province (see Section XI.6) was another factor which had a positive impact on consumer spending in 1987.

Retail trade statistics provide a good indication of trends in consumer spending. The preliminary estimates shown in Table IX.2 indicate that the value of retail trade in Newfoundland and Labrador increased by 11.3 percent in 1987 to about $2,680 million. This increase was broadly

Table IX.2

VALUE OF RETAIL TRADE BY TYPE OF BUSINESS
NEWFOUNDLAND AND LABRADOR

Type of Business	Value of Retail Trade ($'000s) 1986	1987	Growth Rate (%)
Food & Sundries Stores	675,643	736,627	9.0
Department Stores	153,439	153,684	0.2
General & Variety Stores	282,291	298,272	5.7
Motor Vehicle Dealers	417,836	506,828	21.3
Service Stations & Automotive Related Stores	266,479	314,811	18.1
Clothing Stores	132,041	137,139	3.9
Hardware and Household Accessories Stores	77,805	84,235	8.3
Drugstores	142,930	161,621	13.1
Sporting Goods and Accessories Stores	13,265	17,150	29.3
All Other Stores	244,895	269,347	10.0
Total All Stores	**2,406,624**	**2,679,714**	**11.3**

Notes: Values for 1987 are preliminary. The data by type of business is aggregated from more detailed data contained in the source referenced below. Thus the definitions of businesses included in each type may differ from those reported in the source.

Source: Statistics Canada catalogue 63-005.

based as most types of retail trade businesses experienced strong sales growth. Sporting goods and accessories stores recorded the strongest growth in sales, followed by motor vehicle dealers and service stations and automotive related stores.

The increased sales of motor vehicle dealers (both new and used motor vehicles) accounted for about one-third of the total increase in the value of retail trade. The number of new motor vehicles sold increased by 10.8 percent to 27,220 while the value of sales grew by 21.2 percent to $375.9 million. Factory rebates and discounts as well as the availability of financing at low interest rates were key factors leading to increased sales. Also, improved economic conditions have led an increasing number of households to become owners of more than a single vehicle. This trend towards two and three vehicle families has helped boost sales.

Table IX.3

NEW MOTOR VEHICLE SALES IN NEWFOUNDLAND AND LABRADOR

	1987	Percentage Change from 1986
Total New Motor Vehicles		
Number of Units	27,220	10.8
Value of Sales	375,895,000	21.2
Total Passenger Cars		
Number of Units	17,909	7.1
Value of Sales	223,557,000	13.8
Passenger Cars Manufactured in North America		
Number of Units	12,760	-3.3
Value of Sales	163,956,000	5.3
Passenger Cars Manufactured in Japan		
Number of Units	2,821	53.1
Value of Sales	34,973,000	45.9
Passenger Cars Manufactured in Other Countries		
Number of Units	2,328	38.7
Value of Sales	24,628,000	45.8
Total Commercial Vehicles		
Number of Units	9,311	18.7
Value of Sales	152,338,000	34.0
Commercial Vehicles Manufactured in North America		
Number of Units	8,703	20.9
Value of Sales	143,066,000	36.6
Commercial Vehicles Manufactured Overseas		
Number of Units	608	-5.9
Value of Sales	9,272,000	4.1

Note: Commercial vehicles are those which are not passenger cars. They may or may not be bought for commercial uses. Similarly, passenger cars may or may not be bought for personal use.

Source: Statistics Canada catalogue 63-007.

A more detailed breakdown by type of vehicle and place of manufacture is provided in Table IX.3. This table indicates that commercial vehicles (mainly trucks) registered greater sales growth than passenger cars. Sales of commercial vehicles have, in fact, nearly doubled since 1982. While sales of passenger cars manufactured in North America declined slightly in 1987, this was offset by sharply higher sales of passenger cars manufactured in Japan and other overseas countries.

Increased consumer spending was a key factor in the growth of the wholesale and retail trade industry in 1987. Employment in the industry grew by 3,000 on an annual average basis last year, largely because of the increased volume of sales.

Restaurants, caterers and taverns, which are part of the Community, Business, and Personal Services industry, also benefited from increased consumer expenditures in the Province during 1987. Total receipts were $145.0 million, an increase of 7.1 percent over 1986. While the receipts of licensed restaurants, caterers and taverns declined somewhat, this was offset by a 38.2 percent increase in the receipts for take-outs and an 11.2 percent increase in the receipts for unlicensed restaurants.

Consumer spending should continue to post strong growth in 1988 although at a somewhat slower pace than in the previous year. The value of retail trade is expected to grow by about 6.0 percent. The main factors behind the increase are anticipated growth in personal disposable income and continued high levels of consumer confidence which should follow from expected employment gains in 1987.

X. INVESTMENT

Investment spending is important to the ongoing growth and development of the Province's economy in that it either adds to or enhances productive capacity (or capital stock) and hence the growth potential of the economy. For example, investment in the pulp and paper modernization program has enhanced both the quality of newsprint in the Province and the competitive position of the industry. Investment in an additional paper machine, on the other hand, would expand the industry's newsprint capacity. Investment in maintaining and expanding infrastructure such as transportation and communication networks is essential to the efficient functioning of the economy. Oil and gas exploration is also treated as an investment since the discovery and subsequent development of recoverable reserves would lead directly to increased productive capacity in the Province.

Table X.1

INTENDED INVESTMENT EXPENDITURES, NEWFOUNDLAND AND LABRADOR, 1987 (millions of dollars)

	Construction	Machinery & Equipment	Total
Capital	1438.0 (7.1%)	568.3 (-5.4%)	2006.3 (3.2%)
Primary Industries and Construction Industry	395.1 (-9.1%)	83.0 (-12.2%)	478.1 (-9.6%)
Food and Beverage Manufacturing	16.9 (131.5%)	48.9 (88.8%)	65.8 (98.2%)
Other Manufacturing	15.6 (16.4%)	95.1 (-27.8%)	110.7 (-23.7%)
Transportation, Communications and Other Utilities	83.4 (53.3%)	148.4 (12.8%)	231.8 (24.6%)
Trade, Finance, and Commercial Services	118.0 (2.2%)	120.5 (-10.8%)	238.5 (-4.8%)
Institutions and Government Departments	351.5 (18.7%)	72.4 (-11.4%)	423.9 (12.2%)
Housing	457.5 (8.6%)	n/a	457.5 (8.6%)
Repair Expenditures	196.4 (5.5%)	316.1 (1.9%)	512.5 (3.3%)
Total Capital and Repair Expenditures	1634.4 (6.9%)	884.4 (-2.9%)	2518.8 (3.3%)

Note: Figures in parentheses refer to percentage change from 1986. Values for 1986 are preliminary actual while data for 1987 are revised intentions.

Source: Statistics Canada catalogue 61-206.

Investment spending is classified as either capital or repair. Capital expenditures, which are essentially those made to purchase and install new durable physical assets such as buildings or machinery and equipment, are a major determinant of economic growth and development. Repair expenditures are those made to maintain the operating efficiency of existing durable physical assets.

The estimated value of investment spending in the Province in 1987 is provided in Table X.1 along with a breakdown by expenditure type. The estimates are based on a survey of investment intentions carried out by Statistics Canada last year. Capital and repair expenditures include outlays for machinery and equipment as well as outlays for construction activity. It is evident from the table that most capital expenditures are directed towards construction while most repair expenditures are directed towards machinery and equipment.

Diagram X.1

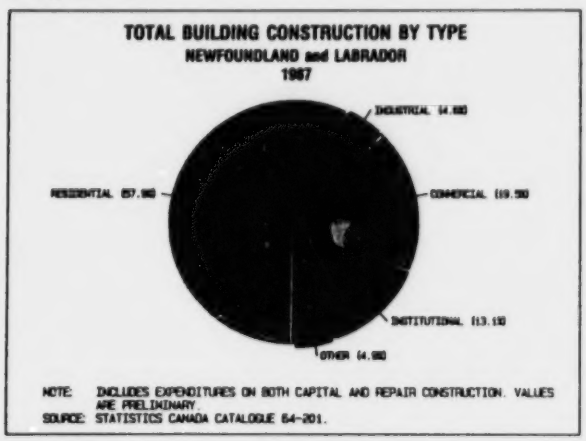
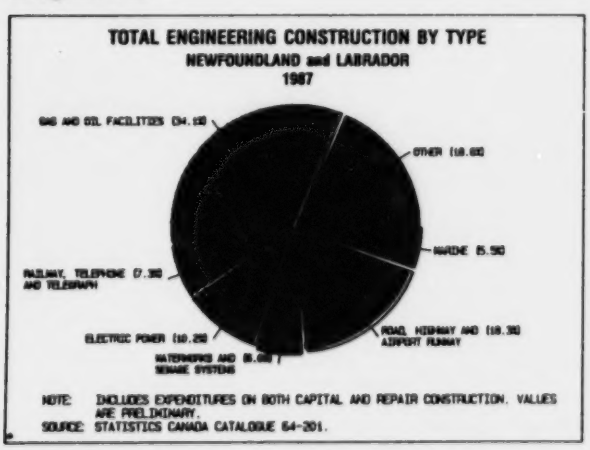


Diagram X.2


TOTAL ENGINEERING CONSTRUCTION BY TYPE
NEWFOUNDLAND and LABRADOR
1987
GAS AND OIL FACILITIES (34.1%)
OTHER (18.0%)
MARINE (5.5%)
RAILWAY, TELEPHONE AND TELEGRAPH (7.3%)
ELECTRIC POWER (10.2%)
ROAD, HIGHWAY AND AIRPORT RUNWAY (18.3%)
WATERWORKS AND SEWAGE SYSTEMS (6.6%)
NOTE: INCLUDES EXPENDITURES ON BOTH CAPITAL AND REPAIR CONSTRUCTION. VALUES ARE PRELIMINARY.
SOURCE: STATISTICS CANADA CATALOGUE 64-201.

Total investment increased in 1987 by an estimated 3.3 percent from 1986 as capital expenditures increased by 3.2 percent and repair expenditures grew by 3.3 percent. A 6.9 percent increase in total construction expenditures more than offset a 2.9 percent decline in machinery and equipment expenditures. At the industry level, growth in capital expenditures was strongest in Food and Beverage Manufacturing and in Transportation, Communication and Other Utilities. An estimated $160 million decline in spending on offshore oil and gas exploration (see Section XII for details) is reflected in the 9.6 percent decrease in total capital expenditures in the Primary and Construction industries. The increase of 3.3 percent in total investment is particularly impressive in lieu of the decline in offshore oil and gas exploration activity.

Construction expenditures (both capital and repair) are classified as either building construction or engineering construction. Preliminary estimates for 1987 indicate that about three-fifths of total construction expenditures were related to building construction while engineering construction accounted for the remainder. Total building construction by type of expenditure in 1987 is illustrated in Diagram X.1. Residential construction accounts for more than one-half of building construction while commercial and institutional construction account for nearly one-third. The remainder is accounted for by other types of construction including industrial construction.

Engineering construction includes all types of construction expenditures that do not involve the construction or repair of buildings. Examples include the construction of roads, bridges, port facilities and hydro-electric dams. As illustrated in Diagram X.2, engineering construction expenditures in 1986 were dominated by oil and gas facilities, a category which consists mainly of offshore oil exploration activity. Other components of engineering construction consisted largely of

expenditures involving the development of infrastructure for the Provincial economy such as roads, electric power facilities, and water and sewer projects.

While investment plays a crucial role in both maintaining and expanding the economy's productive capacity, it is also an important component of total demand for the output of goods and services in the Province. Total investment expenditures in the Province were estimated to be $2,518.8 million in 1987. While investment expenditures have a high import content, especially for machinery and equipment purchased from outside the Province, some of these expenditures result in additional purchases of goods and services produced within the Province. Furthermore, the amount and type of investment spending determines the level of activity in the construction industry.

Total investment in 1988 is forecast to increase by about 4.6 percent. The increase will be generated mainly by higher investment in the electric power industry, an upturn in residential construction, as well as by substantial construction spending by the military in Labrador. As detailed in Section XII, investment in offshore oil and gas exploration is not expected to increase from 1987 levels, however, the startup of development on the Hibernia or Terra Nova oil fields would generate very strong growth in investment expenditures in 1988.

XI.1 THE SERVICE SECTOR

The service sector, which consists of five major industry divisions, accounted for approximately 64 percent of total Gross Domestic Product (GDP) in Newfoundland and Labrador during 1986. In the same year, about 130,000 person years of employment were generated in the service sector, or nearly 72 percent of total employment. Since some of this employment is seasonal, annual average employment statistics understate, to some extent, the number of jobs supported by this industry. Table XI.1.1 below outlines the 1986 distribution of total GDP within the service sector in order of the size of each industry's contribution to the total.

Table XI.1.1

NEWFOUNDLAND AND LABRADOR SERVICE SECTOR
GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY: 1986

	$ Millions	Percent of Total Service Sector
Community, Business & Personal Services	1,390.0	36.6
Public Administration	700.0	18.4
Wholesale & Retail Trade	610.0	16.0
Finance, Insurance & Real Estate	595.0	15.6
Transportation, Communication & Other Utilities	510.0	13.4
TOTAL	3,805.0	100.0

Note: When GDP is disaggregated to an industry level, there is a slight residual error of estimate. In 1986, the residual was $161.5 million. For this reason, the addition of figures in this table and Table IV.1 will yield a slightly different estimate than the 1986 total GDP estimate used elsewhere ($6,127) in this report.

Source: Newfoundland Statistics Agency and Economic Research and Analysis Division, Cabinet Secretariat.

The high concentration of the Province's GDP in these service industries is directly related to the wide range of public goods and services provided by governments such as education, health and welfare, and the high level of demand for the goods and services provided by non-government industries. These service industries are very labour intensive and this, together with the considerable requirement for services in the Province, accounts for the relatively large size of this component of the economy.

Most of the services provided by the Province's service sector are consumed within the Province. There are, however, exportable services which generate additional income and employment for residents of the Province. The Province's tourism industry has been a traditional export of the Newfoundland and Labrador service sector. While much of the tourist activity falls under the Community, Business and Personal Services industry, other industries such as Transportation and Wholesale and Retail Trade also benefit. In addition, the period since the mid-1970s has seen the development of a new exportable component of the service sector in the form of ocean and offshore related research and development.

Details of the 1987 performance of the service sector and outlook for 1988 are provided in the following pages. In summary, the service sector recorded strong gains in 1987. The Transportation, Communication and Other Utilities industry benefited from the strong performance in the goods producing sector as well as from the strong gains recorded for the Tourism industry. The Tourism industry recorded an exceptionally good year in 1987 as both the number of tourist trips and total tourist expenditures rose substantially. Other areas of the service sector such as Trade and Services benefited from the strength in consumer spending and the high levels of consumer and business confidence which prevailed throughout 1987.

The outlook for the service sector is promising for 1988 with all industries expected to experience continued economic growth. Real GDP in the service sector as a whole should grow by about 2 percent and some improvement in employment prospects can be expected. Furthermore, continued improvement and expansion of infrastructure related to the Tourism industry, and the use of agressive marketing efforts, will enhance future growth prospects in this traditional export component of the service sector. As well, the continued development and growth of non-traditional service exports related to marine research and development will influence the future development of the Province's service sector.

XI.2 COMMUNITY BUSINESS AND PERSONAL SERVICES & PUBLIC ADMINISTRATION

The contribution made to GDP by government activities and expenditures in the Province are primarily reflected in the Community, Business and Personal Services and Public Administration industries, which together accounted for 55 percent of service sector GDP and 35 percent of total GDP in 1986. An examination of the areas of government responsibility provides considerable insight into why government activities contribute so significantly to economic activity within the Province. Government and institutions of government are responsible for the development, provision and maintenance of social and economic infrastructure throughout the economy; development, management and regulation of the Province's primary resources; and development, management and delivery of essential services to the population such as health, education, welfare and justice. These essential goods and services support the basic framework within which economic development and activity in the Province occurs. Table XI.2.1 highlights major areas of Provincial government responsibility in the 1987/88 fiscal year together with illustrative examples of the types of services provided by various Departments of Government.

Table XI.2.1

AREAS OF RESPONSIBILITY OF GOVERNMENT, GOVERNMENT AGENCIES AND INSTITUTIONS AND EXAMPLES OF THE SERVICE PROVIDED

Area of Responsibility	Service Provided	Example of Government Department Responsible for Provision of the Service
Infrastructure — Provision and Management	Highway systems — construction and maintenance, airports, ferry terminals, water systems, supply & distribution of electrical energy	Transportation Environment & Lands Energy
Resources — Management and Regulation	Fishery — provides infrastructure, manages and promotes	Fisheries
	Forestry — management and development	Forestry
	Minerals — manages the Province's mineral resources	Mines
	Protection and enhancement of the environment	Environment & Lands
Essential services to the population — Provision and Maintenance	Develops and maintains Provincial education system (primary, elementary & secondary)	Education
	Co-ordinates, facilitates, monitors, post-secondary education and training services	Career Development and Advanced Studies
	Co-ordinates existing hospital and homes services	Health

Table XI.2.1 (Cont'd)

AREAS OF RESPONSIBILITY OF GOVERNMENT, GOVERNMENT AGENCIES AND INSTITUTIONS AND EXAMPLES OF THE SERVICE PROVIDED

Area of Responsibility	Service Provided	Example of Government Department Responsible for Provision of the Service
	Income support for needy persons; protection of children, adoption services and services to disabled or disadvantaged persons	Social Services
	Protection of citizens, persons and property	Justice
Development of the Economy	Identifies and promotes business opportunities in the Province relating to resource, trade and tourism development	Development & Tourism
	Economic and social development in rural areas	Rural, Agricultural and Northern Development
	Provides housing and plans and administers industrial parks and properties	Newfoundland and Labrador Housing Corporation
	Local government and rural planning and development; also, provision of water and sewer services in unincorporated areas	Municipal Affairs
Other Public Services	Consumer and commercial services to the general public	Consumer Affairs and Communications
	Quality of life, management of parks, and wildlife resources preservation, recreation and fitness	Culture, Recreation and Youth
	Labour standards and procedures; occupational health & safety; labour & management	Labour

Source: Economic Research and Analysis Division, Cabinet Secretariat.

These essential services are costly for Government to provide as demonstrated by the estimated gross expenditures associated with their provision in the 1987/88 fiscal year. The expenditures, which are outlined in Table XI.2.2 below, flow into the economy through the government Departments which provide, or ensure the provision of, the various services. In some instances a Department will provide a service directly whereas in other instances, the Department ensures the provision of services. In either case, the activities of government in carrying out its responsibilities will influence the level of activity in both the goods and service producing sectors.

Table XI.2.2

ESTIMATES OF GROSS EXPENDITURES BY THE PROVINCIAL GOVERNMENT DURING THE 1987-88 FISCAL YEAR BY CATEGORY OF RESPONSIBILITY AND DEPARTMENT OF GOVERNMENT

Category of Responsibility	Responsible Department	Revised Estimate ($000)	Percent of Total
Infrastructure — Provision and Management	Transportation	191,968	
	Environment & Lands	11,138	
Resources — Management and Regulation	Fisheries	29,381	
	Environment & Lands	**	
	Forestry	33,661	
	Energy	56,182	
	Mines	16,382	
SUB-TOTAL		**338,712**	**14.8**
Essential services to the population — Provision and Development	Education	460,821	
	Career Development & Advanced Studies	199,174	
	Health	652,546	
	Social Services	200,938	
	Justice	88,900	
SUB-TOTAL		**1,602,379**	**69.9**
Development of the Economy	Development & Tourism	31,738	
	Rural, Agricultural & Northern Development	41,646	
	Newfoundland & Labrador Housing Corporation	7,301	
	Municipal Affairs	109,357	
SUB-TOTAL		**190,042**	**8.3**
Other Public Services	Consumer Affairs and Communications	2,566	
	Culture, Recreation & Youth	36,598	
	Labour	7,453	
SUB-TOTAL		**46,617**	**2.0**
General Government(1)		**114,228**	**5.0**
Total Gross Government Expenditures		2,291,978	100.0

(1) Includes costs of the Executive Council, Department of Finance, the Legislature, Department of Public Works and Services and the Public Service Commission. Excludes Consolidated Fund Services.

** Included elsewhere.

Source: Treasury Board.

As federal and municipal government expenditures flowing into the economy are omitted from Table XI.2..2 above, this table does not include all government expenditures made in the Province which influence the level of economic activity through the provision of public goods and services. Federal government expenditures can be broken out in much the same way as Provincial expenditures since, in many instances, both levels of government have shared responsibility for the provision and maintenance of certain services. For example, the Canada Employment and Immigration Commission and the Department of Career Development and Advanced Studies share responsibility for the development of the Province's labour force. Other services, such as postal services (Canada Post), are the sole responsibility of the Federal government. Expenditures by all three levels of government exert a strong influence on economic activity in the Province and on the size and composition of the service sector.

Virtually all government departments are considered part of the Public Administration industry. In view of the wide range of responsibilities delegated to government, it is not surprising that this industry accounted for 18.4 percent of GDP in the service sector in 1986 and 11.7 percent of total GDP. Provision of such a wide range of services requires a considerable number of people. This is reflected in the Labour Force Survey which, in 1987, indicated that approximately 18,000 person years of employment were generated in the Public Administration industry. Although most government departments fall under Public Administration, the expenditures of these departments affect Gross Domestic Product and the general level of economic activity in other industries throughout the economy. Table XI.2.3 below summarizes government departments or agencies in terms of some illustrative examples of industries which benefit from the expenditures.

Table XI.2.3

ILLUSTRATIVE EXAMPLES OF INDUSTRIES WHICH BENEFIT, IN TERMS OF EMPLOYMENT AND GDP, FROM GOVERNMENT EXPENDITURE BY DEPARTMENT OR AGENCY

Public Administration (Department/Agency)	Industry
Transportation	Transportation, Communication & Other Utilities; Construction Industry; all industries which use and benefit from the Transportation System
Environment	Various components of the Service Sector
Mines & Energy	Electric Power & Water Utilities Industry; Mining Industry
Fisheries	Primary Fishing and Fish Products Industries; Transportation, Communications and Other Utilities, Construction Industry
Education	Community, Business and Personal Services
Career Development & Advanced Studies	All Industries
Health	Community, Business and Personal Services
Development & Tourism	Resource Industries; Service Industries
Rural, Agricultural & Northern Development	Resource Industries; Wholesale and Retail Trade
Newfoundland & Labrador Housing Corporation	Construction
Municipal Affairs	Construction, Transportation, Communication and Other Utilities
Consumer Affairs	Consumers in general
Culture, Recreation & Youth	Community, Business and Personal Services; Construction Industry
Labour	All Industries
Social Services	Community, Business and Personal Services; Wholesale and Retail Trade
General Government	Public Administration

Source: Economic Research & Analysis Division, Cabinet Secretariat.

The Community, Business and Personal Services industry accounted for 36.6 percent of GDP in the service sector in 1986 and 23.3 percent of total GDP; this was the largest of all industries in the Province in terms of both GDP and employment. Approximately two-thirds of this industry is made up of services incidental to education, health and welfare, all of which are related to the 'provision and development of essential services to the population'. As illustrated in Table XI.2.2, this component of government expenditure accounted for 69.9 percent of total expenditures in the 1987/88 fiscal year. The provision of education and health services is particularly labour intensive as demonstrated by the fact that in 1984 more than 30,000 persons were employed in the provision of these services alone.

In addition to services such as education, health and welfare provided by government, many other services of a business or personal nature fall within the Community, Business and Personal Services industry. As illustrated in Table XI.2.4 below, this component of the industry provides a wide range of services to the public in addition to those attributable to governments.

Table XI.2.4

COMMUNITY BUSINESS AND PERSONAL SERVICES OTHER THAN THOSE PROVIDED BY GOVERNMENT

Major Service Group	Type of Service
Motion Picture, Audio and Video Production & Distribution	Motion Picture Theatres, Video Shops
Sports and Recreation, Clubs and Services	Golf & Curling Clubs, Bowling Alleys
Personal Household Service	Barber and Beauty Shops, Laundries & Cleaners, Funeral Homes
Membership Organizations	Religious Organizations, Labour Organizations, Political Organizations
Computers and Related Services	Computer Services, Computer Equipment Maintenance and Repair
Accounting and Bookkeeping Services	Chartered and Certified Accountants, Accounting and Bookkeeping Services
Architectural, Engineering and Other Scientific and Technical Services	Architects, Engineers, Draftsmen
Lawyers and Notaries	Barristers, Solicitors, Lawyers
Other Services	Machine & Equipment Rental, Automobile & Truck Rental & Leasing, Photographers, Electric Motor Repairs, Travel Services
Accommodation Services	Hostel, Motel and Hotel Services
Food and Beverage Services	Restaurants, Caterers, Taverns, Bars and Night Clubs

Source: Standard Industrial Classification 1980 and Economic Research & Analysis Division, Cabinet Secretariat.

The level of output and employment for some components of the Community, Business and Personal Services industry tends to be fairly stable from one year to the next except in times of government budgetary restraint. For example, the requirement for law enforcement services and for education and health are strongly related to demographic and social factors. Other components of the industry are primarily related to the general level of economic activity in the Province. Changes in real wages and in the level of employment will influence the level of output of all components of this industry.

For the Community, Business and Personal Services industry as whole, annual average employment was estimated at 58,000 person years in 1987, an increase of 2,000 from 1986. Real GDP in this industry increased by 2.1 percent in 1987 and further gains are expected in 1988.

XI.3 WHOLESALE AND RETAIL TRADE

The contribution of wholesale firms and retail outlets to economic activity within the Province is reflected in the GDP of the Wholesale and Retail Trade industry, the third largest component of Provincial GDP in the service sector. In 1986, this industry accounted for 16.0 percent of GDP in the service sector and 10.2 percent of total GDP. In the same year, some 35,000 person years of employment were generated in this industry, or about 19.3 percent of total employment.

Wholesale firms are those primarily engaged in the purchase of goods for sale and distribution to retailers and to industrial, commercial, institutional or professional users and, sometimes, to other wholesalers. Wholesalers also act as agents or brokers, buying or selling merchandise on a commission basis. In 1986, it is estimated that about 20 percent of employment in Wholesale and Retail Trade was accounted for by the wholesale component of the industry. Illustrative examples of the types of products distributed by wholesalers in the Province are provided in Table XI.3.1 below.

Table XI.3.1

PRODUCTS DISTRIBUTED BY THE WHOLESALE TRADE SERVICE INDUSTRY

Major Product Group	Type of Product
Food	Confectionaries, Poultry & Eggs, Meat & Meat Products, Fish & Seafood, Dairy Products
Beverages	Beers, Alcoholic Beverages, Soft Drinks
Drugs & Toilet Preparations	Drugs and Druggist Sundries
Apparel	Clothing, Footwear
Electrical & Electric Household Appliances & Parts	Electrical House Appliances
Household Furniture	Furniture - Kitchen, Bedroom, Living Room
Household Furnishings	China & Glassware, Floor Coverings, Draperies
Motor Vehicles	Automobiles (new & used), Busses, Trailers
Motor Vehicle Parts	Automotive Parts & Accessories, Recapping Tires, Retreading Tires
Hardware	Combination of Basic Lines of Hardware
Lumber & Building Material	Lumber, Plywood, Paint, Glass, Wallpaper
Machinery & Equipment	Office & Store Equipment, Dental, Hospital & School Equipment
Toys, Amusement & Sporting Goods	Toys, Firearms, Tenting Equipment

Source: Standard Industrial Classification (1980) and Economic Research & Analysis Division, Cabinet Secretariat.

Retail businesses are primarily engaged in buying commodities for resale to the general public for household, personal or business consumption and in providing related retail services such as product installation and repair. Retail outlets in the Province range from single proprietor corner stores to large multi-product department stores. It is estimated that retail trade accounts for about 80 percent of employment in the Wholesale and Retail Trade industries. The relative size of this component of the industry reflects the fact that every community in the Province requires the services of retail outlets whereas wholesale businesses can distribute their products from central locations throughout the Province.

An examination of the types of firms found in the Retail Trade industry and the types of products sold aids in understanding the relative importance of this industry. Table XI.3.2 highlights the types of goods and services provided by the retail segment of the industry.

Table XI.3.2

RETAIL TRADE STORES: ILLUSTRATIVE EXAMPLES OF THE TYPES OF GOODS SOLD

Type of Establishment	Product Sold
Food Stores	Usual line of products carried by Chain Grocery Stores, Corner Grocery Stores, Supermarkets
Liquor Stores	Beers, Wines & Liquors
Prescription Drugs & Patent Medicine Stores	Pharmaceutical and Health Care Products
Shoe, Apparel, Fabric & Yarn	Shoes, Men's & Women's Clothing, Fabric & Yarns
Household Furniture, Appliance & Furniture Stores	Household Furniture, Appliances & Furnishings, Televisions & Radios, Draperies & Floor Coverings
Automotive Vehicles, Parts & Accessories Stores	Automotive Dealers (new & used), Motorcycle & Snowmobile Dealers, Gasoline Service Stations, Automotive Parts, Motor Vehicle Repair Shops
General Retail Merchandising Stores	Usual line of products carried by Department Stores, General Merchandise Stores
Other Retail Stores	Books & Stationery, Paint, Glass & Wallpaper, Hardware, Sporting Goods, Jewellery Stores, Musical Instruments, Toys, Optician's Shops, Monuments & Tombstones, Mobile Homes

Source: Standard Industrial Classification (1980) and Economic Research & Analysis Division, Cabinet Secretariat.

There is a high level of demand from all areas of the economy for these goods and services, and Table IX.1 is repeated here as Table XI.3.3 to illustrate this fact for the household sector. This table outlines the distribution of consumer expenditures in the Province for a representative family in 1982. It is readily apparent that at least 60 percent of total consumer expenditures are related to the goods and services provided by the Wholesale and Retail Trade industry. In 1987, as dis-

cussed in Secton IX, the value of retail sales in the Province was an estimated $2.7 billion. This does not represent the total amount of cash flow through this industry, however, since all sales and services are not captured by retail trade statistics, mainly because of the fact that sales by wholesalers are excluded from retail trade statistics.

Table XI.3.3

DISTRIBUTION OF CONSUMPTION EXPENDITURES BY TYPE FOR A REPRESENTATIVE NEWFOUNDLAND FAMILY IN 1982

Category	Percentage of Current Consumption		
Food	**26.1**		
Shelter	**17.0**		
Principal Accomodation		16.0	
Rented			3.2
Owned			6.4
Water, Fuel and Electricity			6.4
Other Accomodation		1.0	
Household Operation	**6.7**		
Household Furnishings and Equipment	**5.0**		
Household Furnishings		2.6	
Household Equipment		2.1	
Services		0.1	
Clothing	**9.6**		
Transportation	**15.3**		
Private Transportation		14.0	
Public Transportation		1.4	
Health Care	**2.0**		
Personal Care	**2.6**		
Recreation	**5.4**		
Reading Materials & Other Printed Matter	**0.6**		
Education	**0.7**		
Tobacco Products and Alcoholic Beverages	**6.0**		
Miscellaneous	**3.0**		
TOTAL	**100.0**		

Note: Percentages may not add to total because of rounding error. There were 465 famlies in the sample with the average size being 3.68 persons.

Source: Statistics Canada Catalogue 62-555.

The Wholesale and Retail Trade industry purchases manufactured goods locally and links the Province's economy to national and international economies through its imports. Local wholesalers import products from numerous markets and as well, large national clothing, food and hardware distribution chains and other companies ship goods directly to their wholesale and retail outlets in the Province. Because the Wholesale and Retail Trade industry distributes goods to all areas of the Provincial economy, its performance and output depends on the level of activity in other industries

in both the goods and service sectors. For example, increases in the level of employment or real wages in Public Administration will influence the demand for goods sold by the Wholesale and Retail Trade industry. Also, growth in the fishing industry or increased activity in the construction industry will stimulate increased output in the Wholesale and Retail Trade industry.

In 1987, the Wholesale and Retail Trade industry benefited from both increased employment and increased real personal income. The level of employment in the industry increased by 3,000 on an annual average basis and real GDP grew by 7.6 percent. Real growth in the order of 2.7 percent is expected in 1988. This is consistent with the anticipated performance of other Provincial industries in 1988 and with anticipated gains in employmemt and real personal income.

XI.4 TRANSPORTATION, COMMUNICATION AND OTHER UTILITIES

The Transportation, Communication and Other Utilities industry accounted for 13.4 percent of GDP in the Province's service sector in 1986 and 8.5 percent of total GDP. Annual average employment in 1987 approximated 16,000 person years, or about 8.6 percent of total employment.

The Transportation, Communication and Other Utilities industry, which is larger in terms of GDP, than any of the goods producing industries, includes the activities of firms and governments which provide transportation and communication links within the Province and to the rest of the world. The services provided by this industry are fundamental, and are essential to the functioning of the economy. As Table XI.4.1 demonstrates, this industry provides transportation for individuals within the Province, as well as to and from the Province. The industry also provides for the movement of large volumes of freight to and from the Province. This is particularly critical for Newfoundland and Labrador since virtually all of the output of the primary and secondary industries such as fish products, pulp and paper products and iron ore are exported and large volumes of consumer goods are imported. The maintenance of transportation networks and the provision of communications services such as radio and television, as well as telephone and postal services, are also important to the Province. In view of the magnitude and wide range of services offered, it is not surprising that output and employment in this industry is so large.

TABLE XI.4.1

SERVICES PROVIDED BY THE TRANSPORTATION, COMMUNICATION & OTHER UTILITIES INDUSTRY

Category of Service	Type of Service Provided
Air Transport	Air Passenger Service, Air Cargo, Aircraft Servicing, Airport Operations
Railway Transport	Container Service, Railway Freight
Water Transport	Coastal Shipping, Freight Transport, Ocean Transportation, Ferry Services.
Truck Transport	General Freight, Fish, Forest and Consumer Products
Other Transportation & Services Incidental to Transportation	Taxicab, Highway, Street & Bridge Maintenance; Storage & Warehousing
Telecommunications, Broadcasting	Radio & Television Broadcasting
Telecommunications Carriers	Cable Service, Public Telephone, Satellite Communications, Telephone Network
Postal & Courier	Postal Service, Parcel Express, Pick-up & Delivery

Source: Standard Industrial Classification (1980) and Economic Research and Analysis Division, Cabinet Secretariat.

Transportation is the largest component of the Transportation, Communication and Other Utilities industry. Historically, economic activities carried out in the Province have exerted a strong influence on the structure of the transportation system serving the Newfoundland and Labrador economy. Prior to the period of rapid economic growth and development which began in the 1940s, economic activity in the Province was centered around the fishing industry which was comprised almost exclusively of the salt fish trade. The harvesting of fish was carried out in approximately 1,300 small communities which were scattered along some 6,000 miles of rugged coastline. The

catch was salted and cured in these communities and then shipped to distant markets such as Spain, Greece, Portugal, Italy and Brazil. The ocean, which provided a natural highway for such an economy, linked dispersed and isolated communities around the Island and connected the economy as a whole to its distant markets.

Ocean transportation continues to be the fundamental mode of transportation to, from, and around the coast of the Province. Map XI.4.1 illustrates the complex marine transportation network which serves the Provincial economy. Major ocean connections exist between Newfoundland and Labrador and Central and Eastern Canada. The Province is also linked to the international economy, as it has been for centuries, by marine shipping which is carried on between ports in the Province and ports around the world. Other equally important connections provide transportation services to isolated communities along the south coast of the Island and between Newfoundland and the Coast of Labrador.

Marine Atlantic, a Crown Corporation, is an important operator in the ocean waters surrounding the Province. Four vessels carry passengers, motor vehicles and freight across the Gulf of St. Lawrence between North Sydney, Nova Scotia and both Port-aux-Basques and Argentia. Marine Atlantic operates an additional eleven coastal vessels in two other areas of the Province. Three vessels serve isolated communities between Terrenceville and Port-aux-Basques on the south coast of the Province and eight vessels operate between St. John's, Lewisporte, St. Anthony and communities on the Labrador coast as far north as Nain. Table XI.4.2 lists ports of call along both routes as well as the distance between these ports. The ocean link between the island portion of the Province and Labrador is seasonal because of heavy ice which blocks the water route between December and April. During these months, several of the Marine Atlantic vessels are re-routed to the South Coast according to demand conditions. In addition, Transport Canada operates three passenger and freight ferry vessels, one in Placentia Bay serving Petite Forte, South East Bight and Paradise, one between St. Barbe, Newfoundland and Blanc Sablon, Quebec and the other between Jackson's Arm and Harbour Deep, on the Northern Peninsula of the Province.

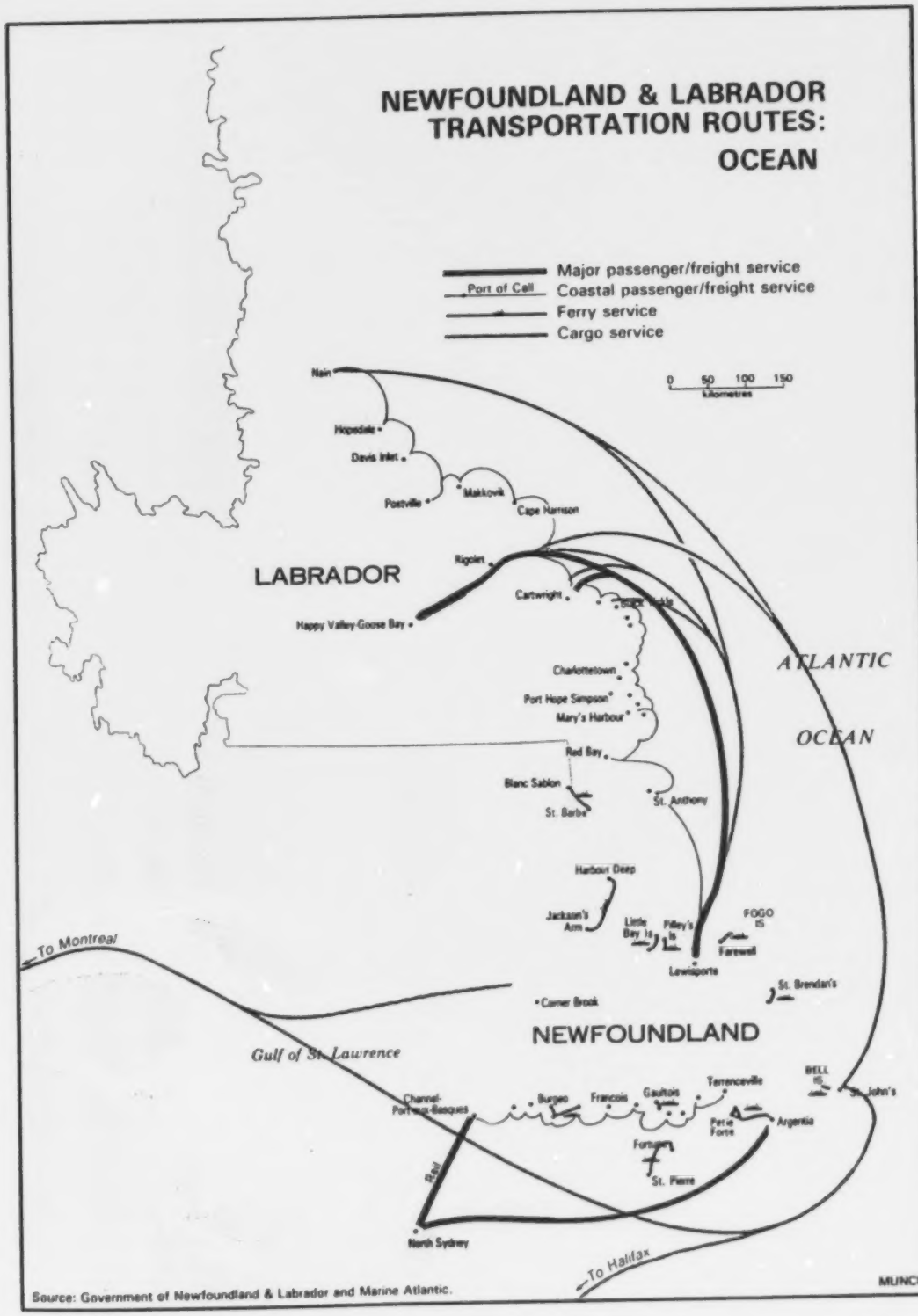
The Provincial government also provides coastal ferry services in addition to those provided by Transport Canada. Eleven ferries operate between various points around the coast of the Island on a regular basis, except when heavy ice conditions or harsh weather conditions prevail.

Other vessels operating in the waters around the Province include eleven Coast Guard vessels operated by Transport Canada and fourteen vessels operated by the Department of Fisheries and Oceans. The Coast Guard vessels provide a variety of services including underwater cable servicing, delivery of emergency supplies, ice-breaking and search and rescue operations. Vessels operated by the Department of Fisheries and Oceans include ten patrol vessels, three research vessels, and one hydrographic vessel. A list of major vessels operated by both the Provincial and Federal Governments around the coast of Newfoundland and Labrador, together with the location of the vessels, is provided in Appendix 3.

During the earlier years of the Province's economic history the railway system was the only overland transportation link of any significance. The purpose of building such an extensive land transportation system in the midst of a marine-based economy was to make possible the extraction of natural resources believed to be in abundance in the interior of the Island. Construction of the railway system commenced in 1881 and was completed in 1896. The system consisted of a main line from St. John's to Port-aux-Basques with four branch lines and several spur lines. The railway remained the most important overland transportation route until the 1950s and 1960s when a concerted effort was made to construct a modern road network.

A privately operated, standard gauge, 573 kilometre rail line operates between Schefferville and Seven Islands, in Quebec. This transportation route is owned by the Iron Ore Company of Canada (IOCC) and is operated by a wholly owned subsidiary of IOCC, the Quebec North Shore

MAP XI.4.1



Source: Government of Newfoundland & Labrador and Marine Atlantic.

& Labrador Railway. A branch line, which is jointly owned by Wabush Mines and IOCC, connects Wabush and Labrador City to the railway system. The railway line was constructed to facilitate the movement of iron ore to market, however passenger and freight services are also offered to residents in the area.

Table XI.4.2

PORTS SERVED BY MARINE ATLANTIC ALONG THE NORTH AND SOUTH COAST OF NEWFOUNDLAND AND LABRADOR

Southern Ports	Nautical Miles From Terrenceville	Southern Ports	Nautical Miles From Terrenceville
Rencontre East	24	Grey River	159
English Harbour West	49	Ramea	176
Harbour Breton	67	Burgeo	187
Hermitage	99	Grand Bruit	217
Gaultois	102	LaPoile	226
McCallum	117	Port-aux-Basques	259
Francois	139		

Northern Ports	Nautical Miles from Lewisporte	Northern Ports	Nautical Miles from Lewisporte
St. Anthony	130	Sandy Island	421
Red Bay	194	Batteau	426
Henley Harbour	224	Black Tickle	430
Cape St. Charles	246	Spotted Islands	435
Indian Cove	251	Domino	438
Battle Harbour	256	Indian Tickle	446
Lodge Bay	257	Grady	468
St. Mary's Harbour	265	Cartwright	491
Fox Harbour/St. Lewis	273	Paradise River	511
Sandy Hook	291	Cartwright	531
Port Hope Simpson	311	Packs Harbour	551
Williams Harbour	333	Rigolet	610
Georges Cove	342	Goose Bay	700
Fishing Ships Harbour	345	Rigolet	790
Charlottetown	361	Indian Harbour	832
Pinsent's Arm	369	Smokey	840
Square Island	371	Emily Harbour	852
Triangle	379	Cape Harrison	892
Snug Harbour	388	Makkovik	938
Venison Island	394	Postville	975
Bolster Rock	402	Hopedale	1,046
Frenchman's Island	413	Davis Inlet	1,096
		Nain	1,166

Note: Ports appearing more than once in the list are visited a second time along the vessels scheduled run.
Source: Marine Atlantic.

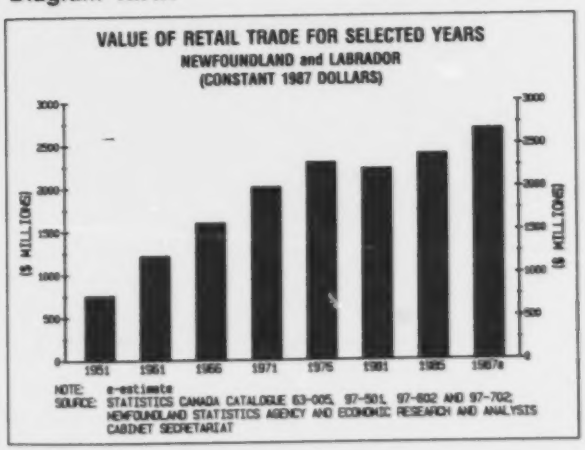
Terra Transport, a federal Crown Corporation, currently operates the railway system on the island portion of the Province. This rail line consists of approximately 880 kilometres of narrow gauge track located between St. John's and Port-aux-Basques, (branch lines are no longer operated). The railway follows closely the route of the Trans Canada Highway, as Map XI.4.2 illustrates.

The railway also provided transportation service to passengers until the 1970s when the operator (then Canadian National Railways) introduced a trans-Island bus system as a faster, more efficient mode of travel for its passengers. Currently the only passenger transportation offered is between Bishops Falls and Corner Brook.

The movement of freight is currently the primary purpose of the Island railway. Freight moved by rail is carried across the Gulf of St. Lawrence by Marine Atlantic and, with the exception of certain commodities classified as dangerous items, is containerized. Containers arriving at Port-aux-Basques, are loaded onto railway flatcars and transported to one of three regional container terminals at Corner Brook, Grand Falls, or St. John's which are part of the Terra Transport system. From these container terminals, Terra Transport operates its own fleet of trucks which are specially equipped to move containers to the receiver.

The stock of equipment operated by the railway is extensive. The Terra Transport fleet consists of approximately 350 flatcars and 1,600 containers, with another 200, 20 to 40 foot container units, on order. The truck fleet is comprised of 530 chassis, most of which are located in the Province. Special containers are being constructed to handle dangerous commodities; when these are put in service, the rail service will be fully containerized. The Island railway can handle 142,000 pounds of freight on each flatcar.

Diagram XI.4.1



The trucking industry has grown in importance as the Province's economy has expanded and developed and trucking is now a key component of the Province's transportation industry. Since the 1940s large numbers of the population have moved from isolated, coastal communities to larger towns which are accessible by road. Over the same period, incomes have increased substantially resulting in rapid growth in consumer expenditures, and thus demand for a wide range of goods not consumed in the fisheries based subsistence economy of the pre-1940s. Furthermore, since 1950 the Province's road system has expanded and improved tremendously. Table XI.4.3 provides an example of improvements made in the road and highway system between 1950 and 1987. The table reveals a decline in gravel roads and a rapid increase in roads and highways with paved surfaces. Improvements to the highway and road system included the construction of the Trans Canada Highway which was completed in 1965 and which provided a trans-insular link from St. John's to Port-aux-Basques. The rise in demand for consumer goods, as illustrated in Diagram XI.4.1, and the availability of a good road system reaching a larger proportion of the population, resulted in a decline in demand for coastal shipping and an increase in demand for trucking services. Table XI.4.4 below illustrates the growing number of commercial vehicles registered in the Province between 1950 and 1987.

The economy is served by two major categories of trucking companies. These are extra-provincial carriers, which move freight to and from the Province, and intra-provincial carriers, which transport freight between points within the Provincial economy. As indicated in Tables XI.4.5 and Table XI.4.7, the extra-provincial trucking fleet is comprised of fewer companies possessing fewer trucking units.

Table XI.4.3

KILOMETRES OF HIGHWAY IN NEWFOUNDLAND AND LABRADOR 1950 TO 1987

Year	Pavement	Gravel	Totals
1950	195	2,897	3,092
1955	209	3,444	3,653
1960	612	5,774	6,386
1965	1,624	6,069	7,693
1970	2,152	6,033	8,185
1975	4,192	4,611	8,803
1980	5,250	3,660	8,910
1985	5,533	3,180	8,713
1987	5,671	2,567	8,238

Source: Newfoundland Statistics Agency and Department of Transportation.

Table XI.4.6 indicates that most of the firms which operate extra-provincial trucks are not based in Newfoundland and Labrador. Almost 74 percent of all companies transporting goods to and from the Province are based in other provinces. Surprisingly, the second largest concentration of extra-provincial trucking companies is found in areas of the Province outside of the City of St. John's.

Table XI.4.4

NUMBER OF COMMERCIAL VEHICLES REGISTERED IN NEWFOUNDLAND AND LABRADOR 1950 TO 1987

Year	Commercial Vehicles
1950	5,149
1955	12,006
1960	16,095
1965	22,535
1970	27,673
1975	35,796
1980	60,521
1985	72,923
1987	81,337

Note: Includes trucks, truck tractors, and buses.
Source: Newfoundland Statistics Agency and Department of Transportation.

MAP XI.4.2

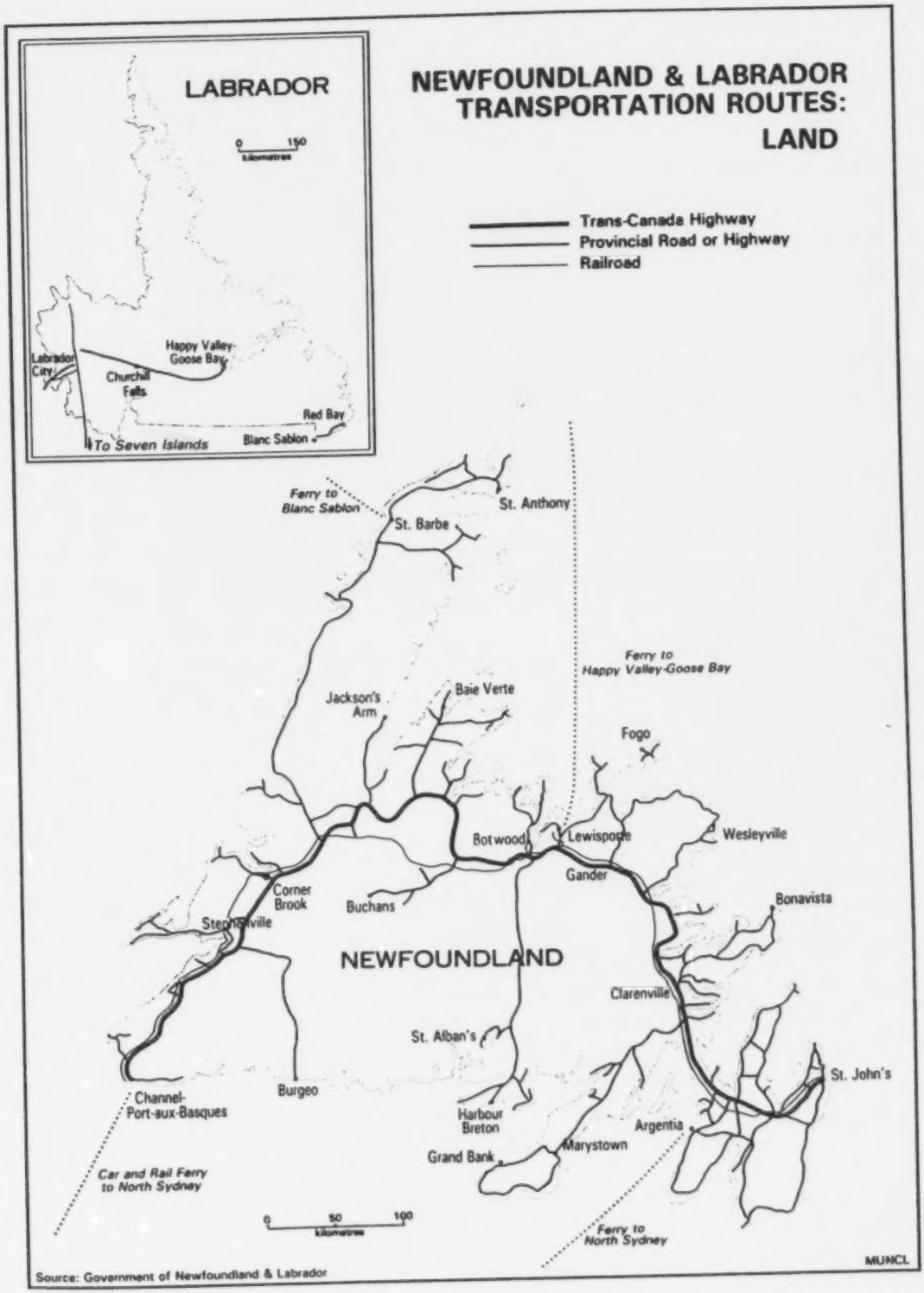

LABRADOR
0 150
Kilometres
Happy Valley-Goose Bay
Labrador City
Churchill Falls
Red Bay
To Seven Islands
Blanc Sablon
NEWFOUNDLAND & LABRADOR TRANSPORTATION ROUTES: LAND
Trans-Canada Highway
Provincial Road or Highway
Railroad
Ferry to Blanc Sablon
St. Barbe
St. Anthony
Ferry to Happy Valley-Goose Bay
Jackson's Arm
Baie Verte
Fogo
Botwood
Lewisporte
Wesleyville
Gander
Bonavista
Corner Brook
Buchans
Stephenville
NEWFOUNDLAND
Clarenville
St. Alban's
St. John's
Channel-Port-aux-Basques
Burgeo
Harbour Breton
Argentia
Marystown
Grand Bank
Car and Rail Ferry to North Sydney
0 50 100
Kilometres
Ferry to North Sydney
MUNCL
Source: Government of Newfoundland & Labrador

Table XI.4.5

EXTRA-PROVINCIAL CARRIERS VEHICLE FLEET PROFILE

	1984	1985	1986	1987
Straight Truck M.G.W. 5,000 kgs. or less	21	18	3	0
Straight Truck M.G.W. 5,001 to 10,000 kgs.	9	8	1	6
Straight Truck M.G.W. 10,001 to 15,000 kgs.	98	82	40	37
Straight Truck M.G.W. 15,001 to 20,000 kgs.	8	13	8	5
Straight Truck M.G.W. 20,001 to 25,000 kgs.	6	0	6	8
Straight Truck M.G.W. 25,001 kgs. or more	6	15	7	5
Tractors	1,131	1,233	944	937
Total Driving Units	1,279	1,369	1,009	998
Number of Companies/Individual Proprietors	244	247	262	266

Note: M.G.W. = Maximum Gross Weight.

Source: Public Utilities Board and Economic Research and Analysis Division, Cabinet Secretariat.

Intra-provincial carriers comprise the largest group of companies which provide trucking services in the Province. This is not surprising since freight delivered to central locations in the Province by extra-provincial and international modes of transport may be handled at sometime by an intra-provincial carrier. These transportation companies move freight to any location within the Provincial economy which is accessible by road. Businesses and organizations which do not have their own vehicles for moving freight, or which receive shipments that are too large or bulky for their own vehicles to handle, contract with intra-provincial carriers to move the freight. These companies also transport containerized freight, brought into the Province by extra-provincial carriers, to final destinations throughout the Province.

Table XI.4.6

LOCATION OF HEAD OFFICES FOR EXTRA-PROVINCIAL TRUCKING COMPANIES OPERATING IN NEWFOUNDLAND AND LABRADOR

Location	Percent of Total
United States	3.0
St. John's	9.6
Areas outside St. John's	13.8
Mainland Canada	73.6
Total	100.0

Source: Public Utilities Board and Economic Research and Analysis Division, Cabinet Secretariat

Table XI.4.7

INTRA-PROVINCIAL CARRIERS VEHICLE FLEET PROFILE

	1984	1985	1986	1987
Straight Truck M.G.W. 10,000 lbs. or less	276	290	314	313
Straight Truck M.G.W. 10,001 to 15,000 lbs.	89	102	92	98
Straight Truck M.G.W. 15,001 to 23,000 lbs.	707	663	658	619
Straight Truck M.G.W. 23,001 to 28,000 lbs.	324	277	253	244
Straight Truck M.G.W. 28,001 to 45,000 lbs.	433	468	461	488
Straight Truck M.G.W. 45,001 lbs. or more	39	46	63	62
Tractors	860	954	1,000	1,012
Total Driving Units	2,728	2,800	2,841	2,836
Number of Companies/Individual Carriers	935	892	884	868

Note: M.G.W. = Maximum Gross Weight

Source: Public Utilities Board and Economic Research and Analysis Division, Cabinet Secretariat.

Available statistics indicate that the intra-provincial trucking industry is a rural based industry. Table XI.4.8 reveals that almost 74 percent of all intra-provincial carriers are based in rural areas of the Province. This suggests that much of the increasing demand for trucking services, which undoubtably occurred as the economy expanded and became linked by overland transportation routes, has been met by entrepreneurs in rural areas of the Province. The rural concentration of the intra-provincial trucking industry helps explain why a majority of intra-provincial carriers operate small trucking units (only about 35 percent are large tractor units) while most extra-provincial carriers operate large trucking units (approximately 94 percent are large tractor units). The explanation rests on differences in market size.

Table XI.4.8

LOCATIONS OF INTRA-PROVINCIAL TRUCKING COMPANIES OPERATING IN NEWFOUNDLAND AND LABRADOR

Urban Centres	Percent
St. John's (1)	15.1
Gander	1.3
Grand Falls (2)	3.2
Corner Brook	6.5
Sub-Total: Urban Centres	26.1
Rural Areas (3)	73.9
Grand Total	100.0

(1) Includes St. John's City and Mount Pearl

(2) Includes Grand Falls and Windsor

(3) Includes all communities outside of St. John's, Mount Pearl, Gander, Grand Falls, Windsor and Corner Brook

Source: Public Utilities Board and Economic Research and Analysis Division, Cabinet Secretariat.

While the total volume of freight transported throughout the Province's economy is large, the volume of freight moving from commercial centres to individual communities is relatively small. Much of the demand for truck transportation services in rural areas is related to the need to move freight from larger centres to hundreds of rural communities. For example, wholesale firms in larger commercial centres such as St. John's or Corner Brook import goods from outside the Province for distribution throughout the economy. Extra-provincial carriers deliver such bulk shipments to firms in commercial centers and intra-provincial carriers re-deliver smaller quantities which are sold to businesses in out-lying areas. Thus, in general, smaller trucking units provide lower per unit cost for freight delivered and are therefore better suited to the transportation needs of the small communities which comprise a large portion of the economy. It is clear, however, that there is also a need to ship larger volumes of goods throughout the economy as well since approximately 35 percent of the Provincial trucking fleet consists of large tractor units.

The Provincial market is relatively smaller and demand exists for both large and small load service. Extra-provincial carriers, on the other hand, access a much larger market, of which Newfoundland and Labrador is only one component. Such companies provide full load service to shippers and receivers that are separated by long distances. Large, high cost technology such as tractor units are required for such purposes and can be supported by the volume of business activity in the market.

The fishing industry has come to rely heavily on the trucking industry since the 1960s. The reason for this is two-fold. First, the movement of the population, including many fishermen, to communities accessible by road has led to a reduced reliance on coastal shipping for the transport of fish. Secondly, the evolution of the fresh fish processing industry (discussed in Section V.3 and V.4.2) has given rise to the need to move large volumes of fish rapidly from port of landing to fish processing facilities. The distribution of fishermen and processing facilities throughout the Province explains the large demand for trucking services throughout the industry (see Maps V.3.1 and V.4.2.1). There are in excess of 200 fish processing facilities throughout the Province and thousands of fishermen scattered around the coastline in hundreds of communities. In cases where the fishing port of the fishermen is located a long distance from the fish plant, trucking companies are engaged to transport the fish.

Table XI.4.9

NUMBER OF EXTRA-PROVINCIAL AND INTRA-PROVINCIAL COMPANIES AND/OR INDIVIDUAL PROPRIETORS LICENSED TO TRANSPORT FISH IN NEWFOUNDLAND AND LABRADOR AND THEIR STOCKS OF TRUCKING UNITS IN 1987

	Extra-Provincial Companies	Intra-Provincial Companies
Straight Trucks	38	210
Dump Trucks	0	144
Tractors	268	322
Total Trucks	306	676
Number of Companies	31	197

Source: Public Utilities Board and Economic Research and Analysis Division, Cabinet Secretariat.

Both extra-provincial and intra-provincial transport companies carry fish, fish products, and fish by-products in the Province, however, the largest number of companies involved in the transport

of fish are found in the intra-provincial component of the trucking industry. In 1987, 197 intra-provincial companies were licenced by the Public Utilities Board to carry fish and fish products. These companies are widely dispersed throughout the Province and a large number of straight trucks, dump trucks, and tractors were available to move the product (676 units in total). Data on the actual number of trucks used to move fish in 1987 were not available, however, the number of trucks in use for this purpose would depend on the volume of fish landings in different areas throughout the economy. It is interesting to note that only 11.2 percent of the intra-provincial companies, owning 21.9 percent of the fleet licensed to carry fish products, was located in St. John's or Corner Brook, again supporting and helping to further explain the earlier observation that the intra-provincial trucking industry is concentrated in rural areas of the Province.

Of the companies involved in the transport of fish and fish products, only about 14 percent were extra-provincial trucking companies. In total, 31 extra-provincial companies, possessing 306 trucking units were licenced in 1987. Most of these companies would be hired to move fish products to locations in Canada and the United States, either for further processing or for sale directly into the market. It is notable that only 14 of the 31 extra-provincial companies licenced to carry fish products were based in the Province; the remaining companies were based in the Maritime provinces (14), Quebec (2) and the United States (1).

The air transportation component of the Province's transportation system is well developed. Map XI.4.3 illustrates that airports connect Newfoundland and Labrador to both national and international locations. Flights also operate between points on the Island and between the Island and Labrador.

The air mode of travel plays a vital role in the Province's transportation system. It is a main carrier of passengers and each year hundreds of thousands of travellers move to and from the Province by airlines. Table XI.4.10 shows that since 1970 the number of travellers moving by air has increased significantly.

Table X1.4.10

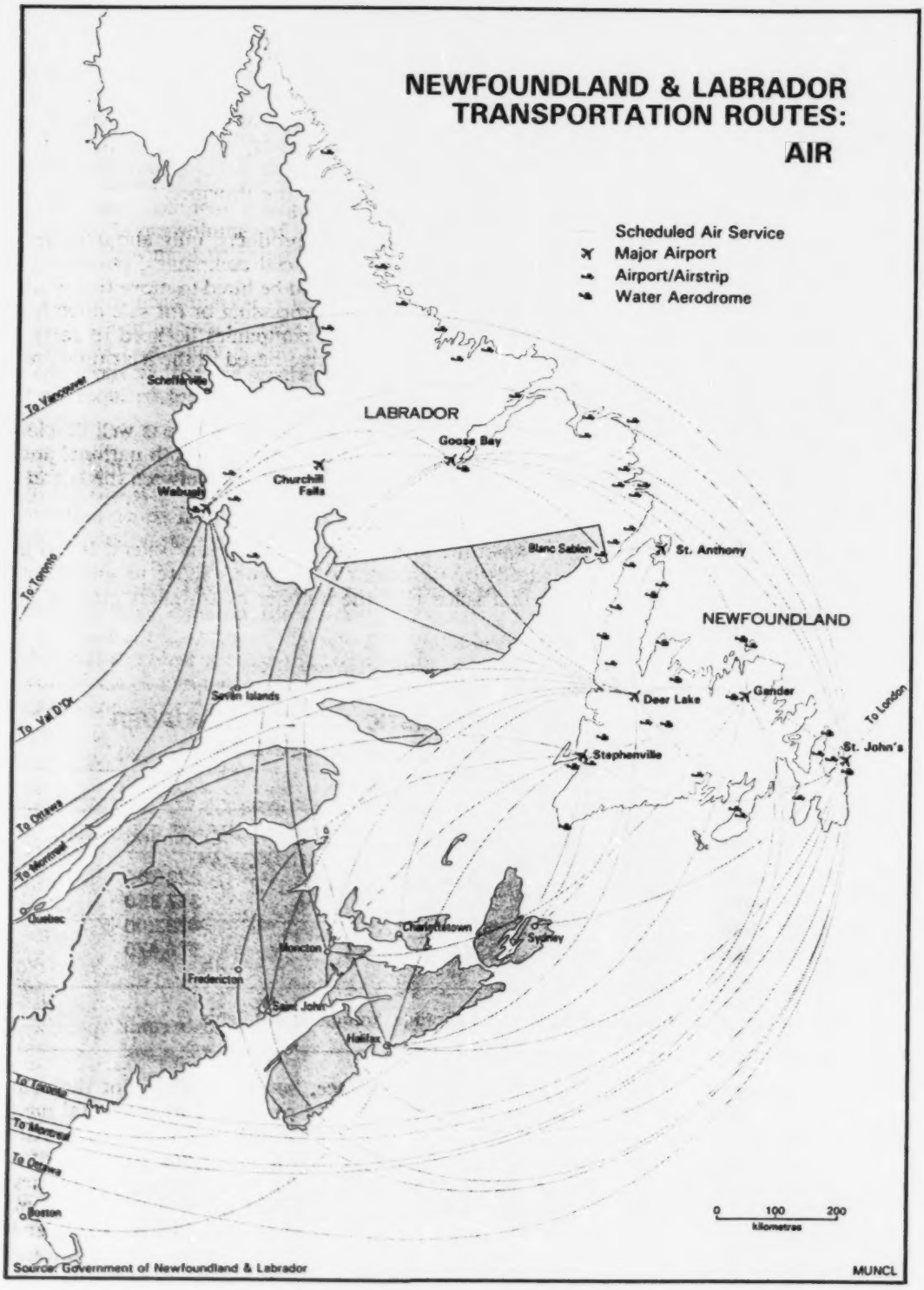
TOTAL AIR PASSENGERS ON DOMESTIC AND TRANS-BORDER FLIGHTS: NEWFOUNDLAND AND LABRADOR 1970-1985

Year	Inbound	Outbound
1970	218,690	223,765
1975	379,270	387,850
1980	406,840	422,200
1985	362,390	375,470

Source: Historical Statistics of Newfoundland and Labrador, Volume II (V) Table Q-5.

The airlines also move freight to and from the Province, however, this is not the primary function of this mode of transportation. In 1987, less than one percent of total general inbound freight arrived by air and this would be comprised mainly of low volume, high value goods. Aircraft also provide emergency medical services and deliver emergency supplies when required, often to isolated and remote parts of the Province. There are several national and international airlines servicing Newfoundland and Labrador with daily and/or regularly scheduled service. Several smaller airlines and charter services operate in remote and isolated areas of the Province on a regular basis and/or as demand requires. A list of airports, airstrips and water aerodomes located throughout the Province is provided in Appendix 3.

MAP XI.4.3


NEWFOUNDLAND & LABRADOR
TRANSPORTATION ROUTES:
AIR
Scheduled Air Service
Major Airport
Airport/Airstrip
Water Aerodrome
LABRADOR
NEWFOUNDLAND
Schefferville
Goose Bay
Churchill Falls
Wabush
Blanc Sablon
St. Anthony
Seven Islands
Deer Lake
Gander
Stephenville
St. John's
Charlottetown
Sydney
Moncton
Fredericton
Saint John
Halifax
Quebec
To Vancouver
To Toronto
To Val D'Or
To Ottawa
To Montreal
To London
To Toronto
To Montreal
To Ottawa
Boston
0 100 200
kilometres
Source: Government of Newfoundland & Labrador
MUNCL

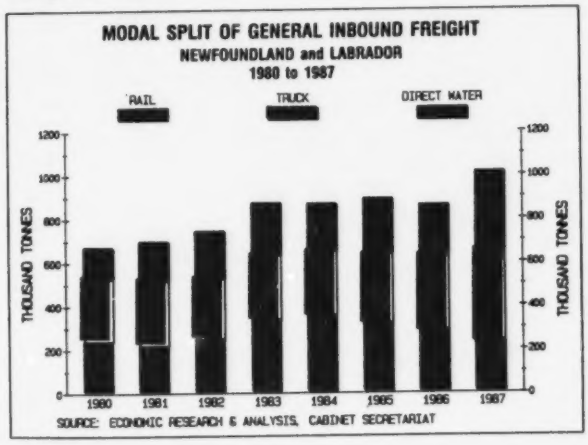
As the Province's economy has grown and changed, so has the demand for the level and type of transportation services offered in the economy. The changing requirements of the economy have been met through the use of more and improved transportation infrastructure than in previous years. During the 1980s the continued demand for improved transportation services has given rise to a move toward modernization of certain components of the industry. The most significant advance in recent years has been the move towards containerization of freight coming into the Province.

Containerization of freight has been incorporated in various modes of transportation in the Province. Starting in 1980, Terra Transport launched an initiative to revitalize the railway. The Rail Revitalization Plan, which was designed to assist in financing the transition from rail car to container service, was introduced. The project is scheduled to be completed in 1988.

The intra-provincial trucking industry has also benefited from containerization of freight by major carriers. Freight terminals have been transformed into highly efficient container storage yards allowing specially designed truck chassis to pick up containers for delivery to the receiver. This has resulted in much faster service than in earlier years since freight no longer has to be unloaded and re-loaded prior to final delivery to the receiver.

Marine Atlantic has also introduced equipment to handle containerized freight on its vessels and at terminals, and has thus expanded its service to increase handling capacity. This has been of tremendous benefit to trucks moving to and from the Province by Marine Atlantic since much of the freight brought to this Province by truck is carried in containers. Other marine carriers also move freight by container. During the 1980s Atlantic Searoute Limited (ASL) and Atlantic Container Express (ACE) became prominent as movers of containerized freight by sea. These companies now operate between the Province and mainland Canada and offer weekly delivery of containerized freight to and from St. John's and Corner Brook.

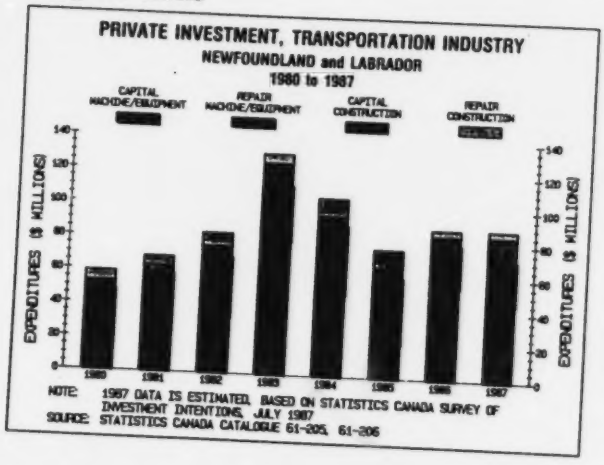
Diagram XI.4.2



The amount of freight transported into the Province in 1987 by extra-provincial carriers is illustrated in Diagram XI.4.2. Of the approximately one million tonnes of freight which arrived in the Province, about 42 percent was carried by truck, 35 percent by ship and 23 percent carried by rail. Approximately 65 percent of the total arrived through Port-aux-Basques and 35 percent through St. John's. The proportion of freight carried by rail has declined in recent years, as illustrated in the diagram. This is a result of increased competition from other carriers. Detailed information relating to the modal share of general freight arriving in the Province from 1980 to 1987 is provided in Appendix 3 of this report.

Investment in the transportation industry, as defined by the Statistics Canada Private and Public Investment Survey, includes only expenditures by private businesses and Crown Corporations such as Marine Atlantic or Terra Transport. Public expenditures on transportation related infrastructure such as highways, roads and bridges, wharf construction, harbour development, Government purchases of passenger ferries and so on are defined as government investment rather than transportation industry investment. For this reason, the published transportation industry investment statistics considerably understate the level of expenditures on the transportation system as a whole, however, they do provide an indication of growth in this industry and a measure of the private sector response to increased demand and available infrastructure. Table XI.4.11 lists

Diagram XI.4.3


PRIVATE INVESTMENT, TRANSPORTATION INDUSTRY
NEWFOUNDLAND and LABRADOR
1980 to 1987
CAPITAL MACHINE/EQUIPMENT
REPAIR MACHINE/EQUIPMENT
CAPITAL CONSTRUCTION
REPAIR CONSTRUCTION
EXPENDITURES ($ MILLIONS)
NOTE: 1987 DATA IS ESTIMATED, BASED ON STATISTICS CANADA SURVEY OF INVESTMENT INTENTIONS, JULY 1987
SOURCE: STATISTICS CANADA CATALOGUE 61-205, 61-206

various categories of transportation related investment, both private and public, while Diagram XI.4.3 illustrates the level of investment by the transportation industry only. During the period from 1980 to 1987, $700.1 million was invested by the Province's transportation industry. Of this amount, $377.9 million (54 percent) was invested in the purchase of new machinery and equipment such as vessels acquired by Marine Atlantic and the construction of new transportation related facilities such as warehouses. The balance of $322.2 million (46 percent) was invested in the repair and maintenance of machinery and equipment as well as existing facilities such as container terminals. The relatively high level of investment by the Province's transportation industry (private businesses and Crown Corporations) in recent years was maintained in 1987. Investment by the industry amounted to $89.0 million in 1987, slightly above the level recorded in 1986 and higher than levels recorded in every year since 1980 with the exception of 1983 and 1984.

Table XI.4.11

CATEGORIES OF CAPITAL AND REPAIR EXPENDITURE, PRIVATE AND PUBLIC TRANSPORTATION RELATED INVESTMENT, NEWFOUNDLAND AND LABRADOR

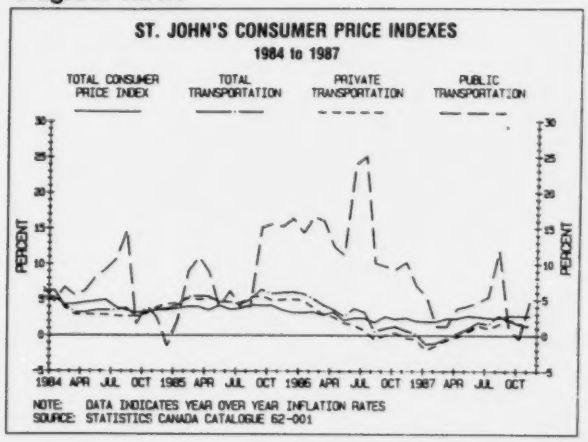
Construction	Machinery & Equipment
Passenger terminals - air, boat, bus, rail and other	Automobiles and major replacement parts
Highways, roads, streets, including logging roads (also includes signs, guard rails, lighting, landscaping, sidewalks, fences)	Buses (all types) and major replacement parts
	Trucks, vans, truck tractors, truck trailers and major replacement parts
Runways including lighting	All-terrain vehicles and major replacement parts
Rail track and roadbeds including signals and interlockers	Locomotive, rolling stock, street and subway cars, other rapid transit and major replacement parts
Bridges, trestles, overpasses	Ships and boats and major replacement parts
Tunnels	Aircraft, helicopter, aircraft engines and other major replacement parts
Other transportation	Other transportation equipment

Source: Economic Research and Analysis Division, Cabinet Secretariat.

Ocean vessels acquired by Marine Atlantic, a federal Crown Corporation, as well as by the federal and provincial governments between 1983 and 1987 are listed in Table XI.4.12. It is clear from this table that vessels acquired by Marine Atlantic have made a considerable contribution to total investment by the transportation industry since 1980 while all vessels acquired have contributed

to an expansion of the marine mode of transportation. Purchase of aircraft in 1986 and 1987 by Air Atlantic, a subsidiary of Canadian Airlines International, and Air Nova, a subsidiary of Air Canada, also contributed to the increased level of investment. Both companies have expanded their operations in the Province in recent years.

Diagram XI.4.4


ST. JOHN'S CONSUMER PRICE INDEXES
1984 to 1987
TOTAL CONSUMER PRICE INDEX
TOTAL TRANSPORTATION
PRIVATE TRANSPORTATION
PUBLIC TRANSPORTATION
PERCENT
1984 APR JUL OCT 1985 APR JUL OCT 1986 APR JUL OCT 1987 APR JUL OCT
NOTE: DATA INDICATES YEAR OVER YEAR INFLATION RATES
SOURCE: STATISTICS CANADA CATALOGUE 62-001

The cost of transportation services to consumers in the Province, as measured by the Consumer Price Index (CPI), rose at an annual average rate of 5.4 percent over the period from 1981 to 1987. This was slightly above the annual rate of growth for the all items CPI which increased at an average annual rate of 5.2 percent over the same period. The largest increase in prices was observed in public transportation. The CPI for this component rose by 10.3 percent between 1981 and 1987, on an annual average basis. Items covered by this component of the price index include local transport and transit such as buses and taxis as well as intercity transportation services such as bus and air travel. Lower price increases were recorded for private transportation. The CPI for this component of transportation rose by 4.8 percent per year, on average, from 1981 to 1987. Items such as the purchase, rental, lease, operation, and maintenance and repair of automobiles as well as registration fees, drivers licences, parking and drivers permits would be included. Diagram XI.4.4 illustrates fluctuations in the CPI for these categories of transportation on a monthly basis from 1984 to 1987.

The strong economic performance in the Province during 1987 was reflected in an increased level of activity in most modes of transportation. Goods provided by the Wholesale & Retail Trade industries in the Province are primarily imported, and strong growth in these industries in 1987 (see Section XI.3) stimulated demand for extra-provincial transportation services. The number of commercial vehicle crossings on Marine Atlantic in 1987 between North Sydney and the Province exceeded crossings registered in 1986 by 19.1 percent. In 1987, 56,647 commercial vehicles were transported across the Gulf of St. Lawrence by Marine Atlantic. Many of the commercial vehicles would be extra-provincial trucks carrying general inbound freight. In 1987, 426,589 tonnes of freight were brought to the Province by truck. This was an increase of 20.6 percent relative to 1986, and the continuation of an upward trend which began in 1983. Freight arriving in the Province by rail would also be transported across the Gulf of St. Lawrence by Marine Atlantic. In 1987, freight arriving by this mode declined by 48,881 tonnes from the volume shipped in 1986. This was a continuation of the downward trend in railway freight experienced in each year since 1985. Most of the loss was due to a decline in the number of rail cars entering the Province. Much of the volume of freight lost by the rail carrier was picked up by the extra-provincial trucking industry as well as by marine cargo companies operating container carrying ships between the Province and central-Canadian locations. In 1987, general inbound freight entering Newfoundland by cargo ships increased by 58.6 percent relative to 1986. In total, general inbound freight entering the Province by all three modes of transport in 1987 stood 18 percent above that transported in 1986.

A strong tourist trade was experienced in 1987 and this is reflected in the number of passengers entering the Province via Marine Atlantic and by air. The number of passenger crossings on Marine Atlantic rose by 6.2 percent in 1987 and the number of air travellers increased by approximately 9.8 percent. Bus travel declined, however, and this was primarily related to competition from other modes of travel.

Table XI.4.12

VARIOUS GOVERNMENT VESSELS ACQUIRED BETWEEN 1983 AND 1987: NEWFOUNDLAND AND LABRADOR

Name of Vessel	Contract Date	Commenced Service	Capital Cost ($ millions)	Operator
Hamilton Sound	1983	1983	1.00	Department of Transportation
Island Joiner	1983	1983	0.30	Department of Transportation
Green Bay Transport	1986	1986	0.15	Department of Transportation
John Guy	1984	1984	n/a	Department of Transportation
Beaumont Hamel (1)	1984	1985	8.00	Department of Transportation
Gallipoli (2)	1985	1986	7.50	Department of Transportation
Caribou	1983	1986	121.00	Marine Atlantic
Marine Courier	1982/83	1983	4.86	Marine Atlantic
Northern Ranger	1985	1986	20.00	Marine Atlantic
Atlantic Freighter	(3)	1986	20.00	Marine Atlantic
Joseph and Clara Smallwood	1986	(4)	130.00	Marine Atlantic
Sir Wilfred Grenfell	(5)	(5)	26.00	Canadian Coast Guard
Ann Harvey	(6)	1987	65.00	Canadian Coast Guard
Harp	1985	1987	2.40	Canadian Coast Guard
Hood	1985	1987	2.40	Canadian Coast Guard
APA #2	1986	1987	0.61	Atlantic Pilotage Authority
Leonard J. Cowley	1983	1985	26.00	Fisheries and Oceans Canada

(1) This vessel is owned by Canada Trust and operated by the Provincial Department of Transportation.

(2) This vessel is owned by Xerox Canada and operated by the Provincial Department of Transportation.

(3) This vessel was purchased by Marine Atlantic in 1986 at a capital cost of US$4.9 million. Modifications increased the total cost to $20.0 million.

(4) This vessel will be used on the Argentia/North Sydney route. Expenses will be allocated over the construction period.

(5) This vessel was constructed on speculation in 1985 at the Marystown Shipyard. It was purchased by the Canadian Coast Guard in 1987.

(6) The contract date is uncertain, however, this vessel was built in Halifax in 1986.

Source: Provincial Department of Transportation, Transport Canada and Economic Research & Analysis Division, Cabinet Secretariat.

The number of individuals employed in transportation related occupations rose in 1987 for the first time since 1982. During the 1980s transportation workers were displaced by changes in the industry, such as the increased use of containers by freight carriers. In 1980, approximately 11,000

people were employed in transportation, on an annual average basis; by 1986 the number employed had fallen to 8,000. The improved economic performance in 1987 led to employment growth in transportation occupations which was almost sufficient to offset the losses which occurred from 1980 to 1986. In 1987, 10,000 people were employed on an annual average basis. The diagrams contained in Appendix 3 illustrate performance in the transportation industry in 1987 relative to previous years.

Some components of the Transportation, Communication and Other Utilities industry are more directly related than others to the level of economic activity in other sectors of the economy, particularly in the short term. The communications and other utilities components are related to the general level of economic activity and also to government policy and demographic factors. For example, decisions relating to changes in the staff complement or capital expenditure program of the Canadian Broadcasting Corporation (CBC) are influenced by Federal government policy, while increases in the number of telephone lines required will be more directly dependent on population growth. The transportation component, however, is influenced more, in the short term, by the level of activity in other goods and services industries. For example, increased activity is anticipated during 1988 in the fishery, forestry, and Wholesale & Retail Trade industries. This, combined with gains in real personal income, will cause the level of transportation activity to increase as well because of the increased movement of goods and people. The outlook for the Transportation, Communication and Other Utilities industry in 1988 is positive with real GDP forecast to rise by about 1.7 percent.

XI.5 FINANCE, INSURANCE AND REAL ESTATE

The contribution to Provincial GDP of firms which provide financial, insurance and real estate services to the general public, to governments, and to businesses and institutions are primarily reflected in the Finance, Insurance and Real Estate industry. In 1986 this industry employed about 5,000 and accounted for 15.6 percent of GDP in the service sector and 10 percent of total GDP. Employment remained stable in 1987 and GDP increased by about 5.1 percent in real terms; in 1988, real GDP is forecast to grow by about 2.1 percent.

Table XI.5.1

EXAMPLES OF ESTABLISHMENTS PROVIDING SERVICES IN THE FINANCE, INSURANCE & REAL ESTATE INDUSTRY

Chartered Banks	Trust Companies
Credit Unions	Consumer Loan Companies
Business Financing Companies	Investment Dealers
Life, Health and Property Insurance	Operators of Buildings and Dwellings
Real Estate Agencies	

Source: Standard Industrial Classification (1980) and Economic Research & Analysis Division, Cabinet Secretariat.

The nature of the services provided by the Finance, Insurance, and Real Estate industry is outlined in Table XI.5.1. Financial services is the largest component and accounts for just over half of the employment in the industry. The demand for financial and insurance services is less cyclical and seasonal than most industries and because of this, employment is fairly stable over time. The real estate component is subject to somewhat larger fluctuations in the demand for its services. The level of activity in the real estate industry depends largely upon conditions in the housing market, in particular, the number of properties sold and their prices. Sales are sensitive to economic factors such as the level of unemployment and mortgage interest rates. Since the housing market is so closely linked to the residential construction industry, some aspects of the real estate market are discussed in Section V.5 of this report.

XI.6 EXPORTABLE SERVICES: TOURISM

The Province's Tourism industry has been a traditional export of the Newfoundland and Labrador service sector. Tourist expenditures represent a considerable cash flow, and the economic benefits of tourist activities flow into both rural and urban areas of the Province. Those firms in the Province which benefit most from the expenditure of tourist dollars are, with the exception of the airline industry, found almost exclusively in the Services (Community, Business and Personal) and Trade (Wholesale and Retail) industries. The improved level of activity in these industries in 1987 was partly a reflection of the increased number of visitors to the Province as well as the increased level of resident tourist activity.

Table XI.6.1

INDUSTRIES WHICH BENEFIT FROM TOURIST EXPENDITURES

Community, Business and Personal Services	Wholesale and Retail Trade
Hotels, Motels and Tourist Clubs	Food Stores
Restaurants, Caterers and Other Food Services	Sporting Goods Stores
Camping Grounds and Travel Trailer Parks	Liquor, Wine and Beer Stores
Recreation and Vacation Camps	Gasoline Service Stations
Sports and Recreation Clubs and Services	Craft, Hobby and Souvenir Shops
Food Services	Prescription Drugs and Patent Medicine Stores
Travel Services	Clothing and Footwear Stores
Laundries and Cleaners	Florist Shops

Source: Standard Industrial Classification (1980) and Economic Research & Analysis Division, Cabinet Secretariat.

The Tourist industry encompasses both resident and non-resident travellers in the Province and includes travel for business related reasons such as conventions; touring, sightseeing and outdoor sports and recreation; and visits to friends and relatives in areas throughout the Province. Major tourist attractions within the Province for both residents and non-residents alike include the new Convention Centre in downtown St. John's, National Parks and Historic Sites, Provincial Parks and campgrounds as well as privately operated attractions such as theme parks, the Marble Mountain Ski Resort near Corner Brook and the Splash 'n' Putt Park near Glovertown. As well, cultural events such as community folk festivals attract large numbers of visitors as does commercial sport fishing and hunting.

Non-resident visitors to the Province come from all over the world including Japan, China, Western Europe, Russia, and Central and South America. The largest percentage of non-resident tourists, however, come from other parts of Canada and the United States. In 1987, for example, over 40 percent of all non-resident tourists arriving in the Province by air originated from Ontario

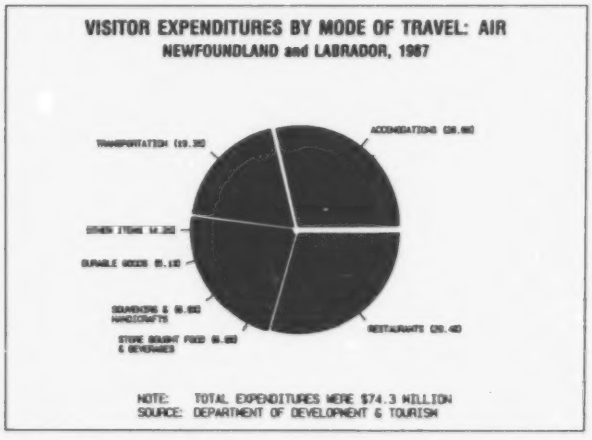
while visitors from the three Atlantic Provinces accounted for about 25 percent. The other Canadian provinces accounted for about 17 percent of the total visitors. Origins within the United States represented about 13 percent of total air arrivals with the New England States accounting for about one in four American visitors. Visitors from countries other than the United States accounted for the remainder. In the same year, about 83 percent of non-resident tourists arriving in the Province by automobile, via the Marine Atlantic ferry service out of North Sydney, Nova Scotia, came from other parts of Canada while about 17 percent came from the United States. Approximately one-third of the non-resident tourists visiting the Province by automobile during 1987 originated from Ontario while an additional one-third originated from Nova Scotia. The other Atlantic Provinces (P.E.I. and New Brunswick) accounted for about 10 percent of the total with the remainder coming from other Canadian provinces. Origins within the United States represent the third largest group of non-resident tourists arriving by automobile (17 percent) with residents of the New England states representing about one third of all American arrivals.

The level of tourist activity in the Province increased strongly during 1987. The total number of tourist trips in the Province, by both residents and non-residents, was estimated at 1.4 million, an increase of 7.9 percent compared with 1986. Total tourist expenditures were estimated at $336.9 million, an increase of 10.4 percent compared with 1986. The increased expenditure was due to the greater number of tourist trips as well as to an increase in the average expenditure per tourist.

Residents of the Province, which account for the export displacement (or import substitution) component of the Tourism industry, accounted for 78.9 percent of the total number of tourist trips during 1987 but only 68.3 percent of total tourist expenditures. This reflects the fact that the average tourist expenditure for residents of the Province is, as would be expected, somewhat lower than for non-resident tourists. Nevertheless, increasing numbers of residents are spending their tourist dollars at home as evidenced by an increase of 7.4 percent in the number of resident tourist trips during 1987. The average resident tourist expenditure also increased during 1987 as witnessed by an 11.6 percent increase in total resident tourist expenditures.

Non-resident tourists travelling in the Province comprise the export component of the Tourism industry. The total number of non-resident visitors to the Province was estimated at about 295,000 during 1987, an increase of about 10 percent compared with 1986. The increase in the number of visitors for other than business related reasons was even more impressive at 16.8 percent. Expenditures by non-resident visitors during 1987 were estimated at $106.8 million, an increase of 7.8 percent compared with 1986.

Diagram XI.6.1


VISITOR EXPENDITURES BY MODE OF TRAVEL: AIR
NEWFOUNDLAND and LABRADOR, 1987
NOTE: TOTAL EXPENDITURES WERE $74.3 MILLION
SOURCE: DEPARTMENT OF DEVELOPMENT & TOURISM

By mode of travel, tourists arriving in the Province by air were estimated at 193,300 during 1987, up 12.6 percent from the previous year. This group has the highest per tourist expenditure of all tourist groups in the Province with total expenditures estimated at $74.3 million for 1987, an increase of 6.9 percent from the previous year. Visitors arriving by air account for more than 65 percent of total non-resident visitors with average expenditures per visitor being about 20 percent higher than for visitors arriving by automobile. About one-half of all non-resident visitors arriving in the Province by air come to visit friends and relatives, about one-third are visiting for business or convention related reasons while the remainder are visiting for touring, sightseeing, outdoor recreation, fishing and so on. Air

Diagram XI.6.2

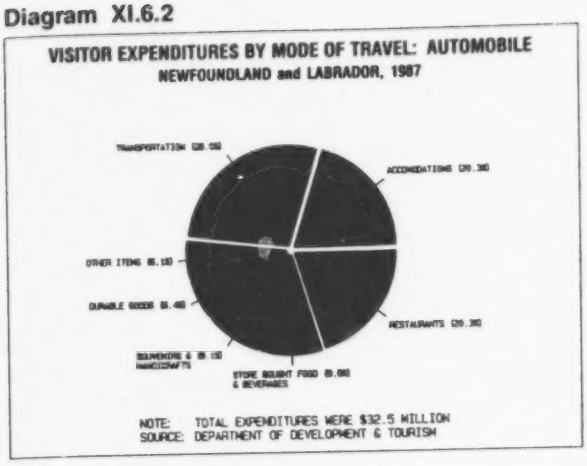
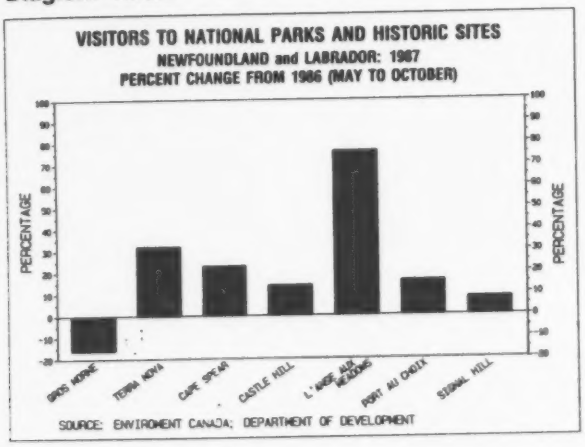

VISITOR EXPENDITURES BY MODE OF TRAVEL: AUTOMOBILE
NEWFOUNDLAND and LABRADOR, 1987
NOTE: TOTAL EXPENDITURES WERE $32.5 MILLION
SOURCE: DEPARTMENT OF DEVELOPMENT & TOURISM

Diagram XI.6.3



travellers spend approximately 72 percent of their non-transportation related tourist dollars on accommodation and restaurant meals as compared with about 56 percent for visitors arriving by automobile. In general, non-resident visitors travelling by air spend relatively more on accommodation and restaurant meals and relatively less on transportation and other expenditure categories than do visitors arriving by automobile.

Most tourist activity takes place in the months from May to October with a concentration during the summer months. The increased level of tourist activity during 1987 was evident from a rise in the number of visits to tourist attractions in the Province. From May to October, the number of visits to National Parks and Historic Sites increased by approximately 11 percent to about 1.3 million (see Table XI.6.2 and Diagram XI.6.3). Of particular note was an increase of 75.9 percent in the number of tourists visiting the National Historic site at L'Anse au Meadows along the Viking Trail. This site, an original Viking settlement, has been declared a World Heritage Site as well as a National Historic Site. The site has been partially restored and offers interpretation of the Viking Heritage at the visitors centre in L'Anse au Meadows. The only decline in the number of tourist visits, according to the available statistics, was recorded at Gros Morne National Park, however, officials at the Park believe that the number of visitors recorded in 1986 was overestimated because of the large number of construction workers entering the Park. Other measures of the number of visitors to the Park during 1987, such as visitors at Information Centres, Lobster Cove Head, and so on, indicate a considerable increase in the level of activity at Gros Morne National Park last year. In addition to the increased number of visitors to National Parks and Historic sites in the Province, the Basques whaling site at Red Bay in Labrador reported 2,000 visitors in 1987, as compared to 800 in 1986 while the Trinity Loop private sector attraction reported 27,000 visitors in 1987, as compared to 9,000 when newly opened in 1986.

Occupancy rates were also much higher in Provincial parks during the peak months of 1987 as indicated in Table XI.6.3. The largest increase, 37.4 percent, was recorded for non-resident tourists which constitute the export component of the Tourism industry. The completion of site enhancement projects, agressive marketing activities by both Government and the private sector, and exceptionally warm weather during the summer months were factors contributing to the higher level of tourist activity.

Table XI.6.2

VISITORS TO NATIONAL PARKS AND HISTORIC SITES, NEWFOUNDLAND & LABRADOR, MAY TO OCTOBER, 1986 & 1987

	1986	1987	% Change
National Parks:			
Gros Morne	188,403	159,139	-15.5
Terra Nova	257,489	340,474	32.2
Sub-total: National Parks	445,892	496,613	11.4
National Historic Sites:			
Cape Spear	98,932	121,976	23.3
Signal Hill	587,612	632,828	7.7
Castle Hill	18,513	21,153	14.3
L'Anse au Meadows	11,218	19,732	75.9
Port aux Choix	6,497	7,557	16.3
Sub-total: National Historic Sites	722,772	803,246	11.1
TOTAL (National Parks & Historic Sites)	1,168,664	1,299,859	11.2

Source: Parks Division, Environment Canada and Department of Development and Tourism.

The level of tourist activity also improved during the winter tourist season in 1987. The Marble Mountain Ski Club in the Corner Brook area reported over 49,000 skier visits during the January to March 1987 season with over 4,000 visitors from outside the local area. More than 2,500 of the non-local visitors were from St. John's, about 950 were from other areas within the Province, and more than 600 were from outside the Province, mainly from the Halifax area. The increase in skiing activity was beneficial to the Corner Brook hotel/motel industry during the skiing season; occupancy rates increased by more than 11 percent during January to March. The hotel/motel industry in other major centres throughout the Province also benfitted from the higher levels of tourist activity throughout 1987 as indicated in Table XI.6.4. In terms of the number of rooms sold, the most impressive gains in 1987 were Clarenville (28.7) which is in close proximity to the Terra Nova National Park, Deer Lake (15.2 percent) which is at the base of the Viking Trail and Corner Brook which is the major centre on the west coast of the Province.

The increased level of tourist activity during 1987 stimulated increased passenger travel in two of the Province's three main modes of transportation during the year. This is discussed more fully in Section XI.4 of this report.

The Tourism industry, like many other components of the service sector, is labour intensive and it is estimated that in 1987 about 8,000 person years of employment, shared between 10,000 or 12,000 individuals, was generated. This represented slightly in excess of four percent of annual average employment in the Province during 1987 and also represented a significant source of seasonal employment, often in rural areas of the Province where Provincial and National Parks and Historic Sites are located.

Table XI.6.3

PROVINCIAL PARK STATISTICS: 1986 & 1987
NEWFOUNDLAND & LABRADOR

	1986	1987	% Change
Total Visitors:	1,446,066	1,617,342	11.8
Residents	1,309,627	1,429,811	9.2
Non-Residents	136,439	187,531	37.4
Total Camping Nights:	287,576	374,760	30.3
Residents	247,204	320,724	29.7
Non-Residents	40,372	54,036	33.8

Source: Department of Culture, Recreation and Youth, and Department of Development and Tourism.

The Tourism industry has four main components: accommodation and lodging, food services, transportation, and tourist attractions. Over the past few years, several major improvements have been made to the accommodation and lodging component. Under the Federal-Provincial Tourism Development Subsidiary Agreement (TDSA), funds were provided to upgrade a large number of tourist lodging establishments around the Province. The Agreement also provided funding for renovations to Hotel Gander as well as funding towards the Hotel-Convention Centre in downtown St. John's. The Radisson Plaza Hotel and Convention Centre opened in September 1987.

Table XI.6.4

HOTEL/MOTEL ROOM RENTALS
VARIOUS LOCATIONS, NEWFOUNDLAND & LABRADOR,
JANUARY TO SEPTEMBER, 1986 AND 1987

	1986: Room Nights Sold	1987: Room Nights Sold	Percent Change
St. John's	191,222	200,723	5.0
Clarenville	13,547	17,439	28.7
Port-aux-Basques	14,455	15,301	5.8
Deer Lake	11,029	12,706	15.2
Corner Brook	51,118	57,080	11.7
Gander	77,130	73,518	-4.7
Grand Falls	28,812	29,239	1.5
Stephenville	16,663	13,537	-18.8
TOTAL	403,976	419,543	3.9

Source: Department of Development and Tourism.

There were no major changes in the food service component of the Tourism industry, however, the transportation component has seen major changes in the past few years. CN Marine became an independent Crown Corporation known as Marine Atlantic. Their new 1,200 passenger ferry, the MV Caribou, began operating in January, 1987 between North Sydney, Nova Scotia and Port aux Basques; this considerably enhanced the quality of water transportation available to tourists entering the Province. A similar vessel will provide ferry services between North Sydney and Argentia beginning in 1989. Also, the completion of the Baie Comeau Road between Labrador and Quebec in 1987 had a positive impact on the Tourism industry in Labrador West. It is estimated that some 3,000 tourists visited the area by auto during the 1987 summer season. Two new regional airlines began operating early in 1986, increasing the level of competition in the air transport industry and providing more attractive airfares to potential tourists. Air Atlantic was created in February, 1986 and serves as a feeder to the Canadian Airlines International network. No major new additions to the transportation component of the Tourism industry are anticipated in 1988.

The 'tourist attraction' component of the Tourism industry has also benefited from several additions or improvements in recent years. The Marble Mountain ski area near Corner Brook the Splash 'n' Putt Park near Glovertown, and the Sunnyside Park near Cormack are some examples. The Marble Mountain Development Corporation was established in February, 1988 to oversee the development of a year round resort at the site. As well, snow making capability is expected to be in place for the next skiing season in the fall of this year. In addition, the Terra Nova National Park has undergone some improvements as have the downtown areas of St. John's and Carbonear which should prove attractive to tourists. The natural arches on the Great Northern Peninsula were enhanced by the addition of a rest area and also the second phase of the Queen's Battery on Signal Hill in St. John's was carried out.

Several major improvements or additions to tourist attractions are planned for the next few years. The Gros Morne National Park is undergoing major changes to its camping and recreation areas and construction of a recreational complex, including a swimming pool and playground, will commence in 1988. An interpretation center is in the planning stages for the historic town of Trinity and further improvements are scheduled in the Humber Valley and Terra Nova Park areas. As well, a fishing lodge will be established at Crooks Lake in Labrador while a number of other hunting and fishing outfitting operators are scheduled for major improvements.

Special events, such as community folk festivals, have flourished in the Province in recent years and during 1988, special events are being marketed under a Province-wide promotional effort, Soiree '88. Some 107 events are being planned throughout the Province with about 70 scheduled to take place in the St. John's area.

Despite heavy competition in national and international markets, the Newfoundland and Labrador tourist industry will continue to experience steady growth in 1988 because of improved and expanded infrastructure and agressive marketing efforts.

XI.7 EXPORTABLE SERVICES: MARINE RESEARCH AND DEVELOPMENT

The Newfoundland and Labrador economy has been linked to the development of marine resources since the Province was originally settled in the 1700s. The continued importance of ocean resources to the Newfoundland and Labrador economy is demonstrated by the fact that in 1987, nearly all communities in the Province depended to some extent on the fishery as a source of employment and incomes. More recently, the discovery of significant offshore oil and gas reserves has added a new dimension to the importance of marine resources in the Province. The Province's close proximity to the ocean and the need to simultaneously conserve and safely develop ocean resources has led to the development of an entirely new industry within the Province and, more importantly, to an industry which enables the Province to build on its past experience and future needs. The development of extensive marine related Research and Development (R & D) capability and associated scientific expertise within the Province has, in addition to enhancing the Province's own ability to successfully exploit ocean resources, created new opportunities for the export of marine related services to other parts of both Canada and the world. As well as generating income and employment for residents of the Province, such R & D is rapidly placing Newfoundland and Labrador at the forefront of marine related research in the world. The increasing worldwide emphasis placed on scientific and technical knowledge and understanding of marine ecology, in recent years, has provided added impetus to the development of an extensive range of world-class marine infrastructure and scientific expertise within the Province of Newfoundland and Labrador.

Memorial University of Newfoundland has played a lead role in the expansion of ocean related R & D and is the site for many of the physical research facilities that can be found within the Province. One of the first scientifically based marine structures built in recent times was the Marine Sciences Research Laboratory (MSRL) of Memorial University. Built in 1967, the mandate of MSRL is to develop research programs of high quality and to encourage faculty at Memorial and other universities to carry out research in aquatic sciences. The facilities of the MSRL, together with its strong research mandate, are unequalled by any university marine laboratory in Canada and have facilitated the growth of many marine oriented programs. The main emphasis is on the physiological and biochemical studies of marine animals, fish and acquaculture. Many of the programs conducted by MSRL are recognized internationally and the facility attracts scientists from many parts of the world to collaborate with local faculty or to pursue independent research.

The Ocean Engineering Research Group was established within the Faculty of Engineering and Applied Science at Memorial University in 1969. The group consists of 40 professors drawn from the disciplines of civil, electrical and mechanical engineering, naval architecture and applied mathematics. The initial focus of the group's activities was a number of large-scale field programs which included some of the world's first demonstration iceberg towing experiments. Some areas of current interest to the group include engineering and economic impact studies of potential Grand Bank oil and gas production, marine transport and safety, and aquaculture. In 1987, a Computer-Aided Design/Computer-Aided Engineering Centre was established at Memorial University with a $1 million grant from the Canada/Newfoundland Offshore Development Fund. This centre supports software to design and analyze offshore structures. The facility is utilized by the Ocean Engineering Research Group and other marine related units located on the university's campus.

The Centre for Cold Ocean Resources Engineering (C-CORE), an engineering research institute formed in 1974, is also located on the campus of Memorial University. The centre works in close co-operation with other groups at the university and particularly with the members of the Faculty of Engineering and Applied Science. Funded by industry and government, the centre undertakes research which contributes to the safe and economic development of Canada's ocean related resources. Specifically, C-CORE's long term research agenda revolves around three main areas: (1) the measurement of ice-impact forces on various offshore structures; (2) the development of ice-hazard detection radar systems; and (3) research related to ice scouring on the ocean floor. The centre's research programs have always been strongly field-oriented, based in Newfoundland and Labrador, the east coast of Canada and the Arctic. C-CORE was granted a $4 million grant

under the Canada/Newfoundland Offshore Development Fund in February of 1987. These funds have and will be used to support and accelerate long term research and development work at C-CORE .

The Newfoundland Institute of Cold Ocean Science (NICOS) established in 1979 is responsible for co-ordinating basic oceanographic research within the Faculty of Science at Memorial University. Approximately 30 scientific staff are engaged in research projects in areas including physical oceanography, marine geophysics, acoustic and satellite remote sensing, and primary and secondary biological reproduction.

The Centre for Offshore and Remote Medicine (MEDICOR) was established in 1982 within the Faculty of Medicine at Memorial University. MEDICOR was designed to research all aspects of health care as it pertains to offshore oil and gas development and to develop specialized health care techniques. The combined efforts of MEDICOR and the Centre for Telemedicine have led to a number of ongoing programs in the Province and have provided the base for continued projects in Canada and around the world. In February of 1987, MEDICOR was awarded $2.7 million under the Canada/Newfoundland Offshore Development Fund to construct a new facility to house both centres. The facility is expected to be completed in the fall of 1988. Such a facility will considerably enhance both centres' ability to develop and deliver health care systems related to ocean development and remote areas of the Province.

The Centre for Earth Resources Research (CERR) formed in 1983 is a part of the Department of Earth Sciences within the Faculty of Science at Memorial University. The CERR was formed to enhance opportunities to collaborate and exchange ideas with scientists in earth resources in government, industry and other research centres. CERR researchers have participated in national and international research endeavors such as the Canadian Lithoprobe Project, the Arctic Ocean Ice Island Project and the International Ocean Drilling Program. The nature of research is wide ranging, encompassing geology, geochemistry, geophysics and geological engineering. The CERR was granted $25 million in 1987 under the Canada/Newfoundland Offshore Development Fund for the construction of a new building. The building is scheduled to open in the fall of 1989.

The Institute for Marine Dynamics, a division of the National Research Council of Canada, was opened on the campus of Memorial University in 1985. The Institute boasts the world's largest ice-tank, a 200 metre towing tank, a model ocean basin and other modern facilities required to support its research programs. In June of 1987, the Institute was granted $3.5 million under the Canada/Newfoundland Offshore Development Fund for the installation of a wave generating unit, which is expected to be completed by 1990. The main thrusts of the Institute's research are studies in hydrodynamics, ice physics and engineering. Requests to utilize the facilities of the Institute have come from both government and private industry across Canada and around the world, particularly Europe.

There are several other marine oriented institutions in the Province which, although separate from Memorial University, work in close scientific cooperation with the University. For example, the new campus for the Institute of Fisheries and Marine Technology was substantially completed in 1985 at a cost of $42 million. The facilities at the Marine Institute include, among other things, a modern flume tank for use in testing fishing gear and assisting in the design of ships and other marine related structures. The Institute delivers a comprehensive list of technical and scientific marine related programs.

The Canadian Centre for International Fisheries Training and Development (CCIFTD) was established in 1986 by the Marine Institute and Memorial University to provide a central source for the application of Newfoundland fisheries expertise to projects in developing countries. The centre draws on the expertise of many individuals and provides a multi-disciplinary approach to fisheries training and development projects throughout the world. Many foreign countries have already benefited from this program.

Further technological development of the Province's fishing industry will be aided by the establishment of a Centre for Fisheries Innovations (CFI). This is a joint operation by the Marine Institute and Memorial University and it is expected that the CFI will be operational by 1988. The CFI will examine long term development prospects in aquaculture, secondary fish products and primary harvesting methods.

In the period since the mid-1970s, the continued expansion of ocean related research facilities has led to the creation of many independent, scientifically oriented consulting firms in the Province. One of the largest of these firms is Newfoundland Ocean Research and Development Corporation (NORDCO). Since its creation in 1975, NORDCO's staff has grown from 35 to approximately 100 permanent members and revenues have increased from $0.5 million in 1975 to about $7.0 million in the 1988 fiscal year. Although NORDCO's research program is diverse, it is developing specialized expertise in Marine Signal Processing and Remote Sensing. Indeed, NORDCO is one of the largest independent research firms in Canada specializing in Marine Resources. In February of 1987, NORDCO received $7.4 million under the Canada/Newfoundland Offshore Development Fund for the establishment of a Centre of Excellence in Marine Signal Processing and Remote Sensing. Completion of this project is expected in the spring of 1990. Such a capability will considerably enhance NORDCO's expertise in this area.

The Federal Department of Fisheries is currently in the process of establishing a National Centre for Resource Assessment and Survey Methodology in St. John's. The purpose of the centre will be to improve the precision of estimates of total allowable catches, catch rates and stock forecasts. In this connection, Newfoundland and Labrador has been designated as the key region in the country for research related to the northern codfish. Studies will also be focused on fishery ecology to determine other various processes which affect survival and recruitment of fish. To aid in research, a Canadian hydrographic vessel has been assigned to the Newfoundland region to undertake surveys to provide information used in the production of navigational charts, tide and current tables and sailing directions. As well, a new oceanographic research component has been added to the scientific branch to examine ocean climate and the environmental influences that these have on fish distribution and abundance. Overall, there will be an increase of 22 percent in the scientific staff at the Department of Fisheries and Oceans.

Other major projects related to the advancement and development of the Province's capability to tap the ocean's resources will be the establishment of a Super Puma Helicopter Flight Simulation Centre in St. John's. Such a facility will provide the advanced electronic infrastructure necessary for safe and expert flight instruction. The facility will attract trainees from all over the world. A total of $4.2 million has been allocated under the Canada/Newfoundland Offshore Development Fund towards the cost of establishing the facility which will be completed by 1990.

Another project which will enhance the Province's offshore expertise is the establishment of an Offshore Survival Centre. The purpose of this centre will be to provide an improved standard of fire fighting and safety training pertaining to offshore development. The centre will be operated by the Marine Institute in conjunction with the existing Marine Emergency Duties Centre. A total of $5 million has been allocated towards this project under the Canada/Newfoundland Offshore Development Fund. Construction of the facility is expected to be completed in 1990.

The development of a Marine Offshore Simulation Training Centre will also complement existing capabilities. To date, $12 million had been approved under the Canada/Newfoundland Offshore Development Fund for the construction of the centre. The centre will provide both basic and advanced institutional and industrial training in a variety of marine and offshore environments related to ship handling and ballast control operations. The centre will be operated by the Marine Institute when completed in the spring of 1990.

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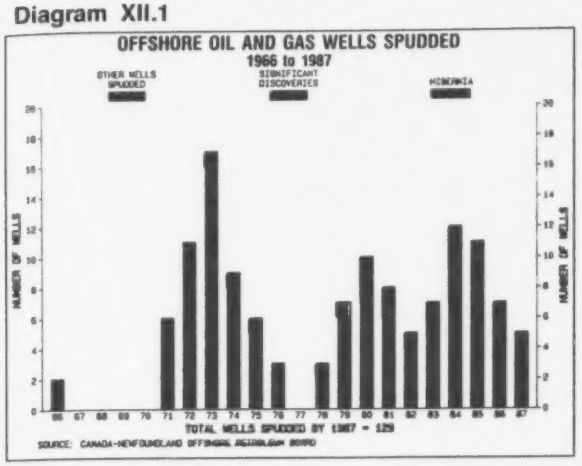
The development and continued expansion of marine research and development capability in Newfoundland and Labrador is assured in the near future. The scientific capability in all aspects of the fishery, offshore oil and gas and other marine resources will not only enable the Province to better serve its own needs, but will also provide increased opportunities for marine related service exports to other parts of Canada and the world.

XII. A REVIEW OF OFFSHORE OIL AND GAS EXPLORATION

Diagram XII.1

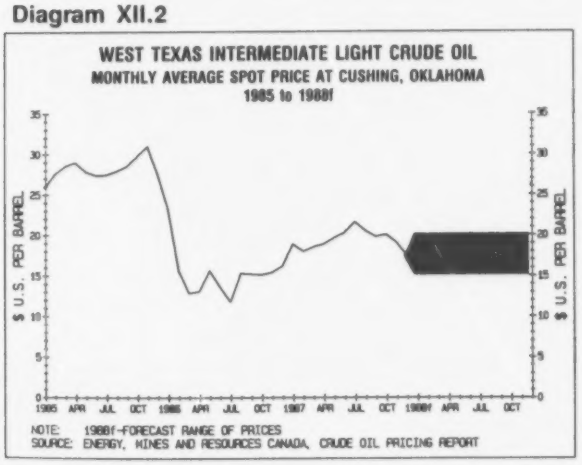


In the early 1960s specialized surveys detected potential hydrocarbon formation beneath the continental shelf off the coast of Newfoundland and Labrador. Sporadic drilling commenced in 1966 and by the end of 1978 a total of $281.1 million had been invested to drill 57 offshore wells, four of which resulted in significant discoveries of natural gas off the coast of Labrador (see Diagram XII.1).

In 1979, $181.4 million was spent to drill seven wells, one of which was the Hibernia P-15 well (see Map XII.1). Further exploration work revealed that the Hibernia field has reserves of high grade light crude oil estimated at between 500 and 800 million barrels with a potential flow rate of up to 150,000 barrels per day. In addition, reserves of 925 billion cubic feet of natural gas have been confirmed.

The discovery of Hibernia in 1979 together with high world oil prices and the introduction in 1980 of Petroleum Incentive Program (PIP) grants provided substantial incentives to increased levels of offshore exploration activity. PIP grants provided for reimbursement of up to 80 percent of the cost of drilling new wells and, between 1980 and 1985, exploration expenditures increased at an annual average rate of 23.5 percent. By the end of 1987, 129 wells had been drilled off the coast of Newfoundland and Labrador resulting in 19 significant discoveries of oil and gas and cumulative total expenditures of approximately $3.5 billion.

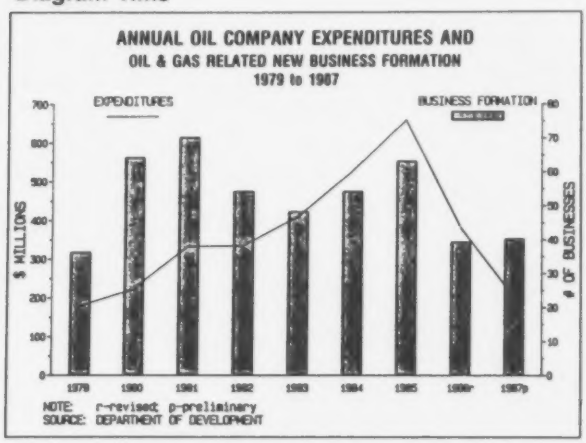
Diagram XII.2


WEST TEXAS INTERMEDIATE LIGHT CRUDE OIL
MONTHLY AVERAGE SPOT PRICE AT CUSHING, OKLAHOMA
1985 to 1988f
$ U.S. PER BARREL
NOTE: 1988f-FORECAST RANGE OF PRICES
SOURCE: ENERGY, MINES AND RESOURCES CANADA, CRUDE OIL PRICING REPORT

Investment in offshore oil and gas exploration peaked at $659.1 million in 1985, a year during which the price of West Texas Intermediate light crude oil (a North American benchmark price) reached about US$31 per barrel. Oil prices were much lower in 1987 at about US$19 on average. In response to the decline in world oil prices, the withdrawal of Petroleum Incentive Program (PIP) grants and a decline in the cost of obtaining contracted drilling services, expenditures declined to $200 million in 1987 (see Diagram XII.2). There were a total of five wells spudded in 1987, one of which was the Terra Nova H-99. This delineation well was completed by Petro Canada in November, 1987 and the results were very encouraging with flow rates of 7,500 barrels per day, the highest sustained rate of any well drilled off the coast of Newfoundland and Labrador. Oil prices are expected to range between US$15 and US$20 in 1988. Exploration expenditures should be at about the same level as in 1987 with between five and eight wells drilled. These figures include the completion of two delineation wells by Petro Canada at the Terra Nova field (located Southeast of Hibernia). On March 9, 1987, Petro Canada announced its intention to develop the Terra Nova field and production could com-

mence as early as 1990. This announcement will have a positive impact on future levels of offshore oil and gas exploration and development activities.

Diagram XII.3

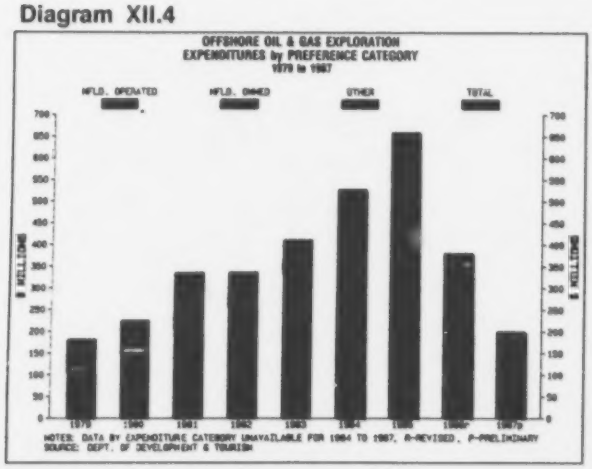


During the period 1979 to 1987, a total of $3.5 billion was spent on offshore oil and gas exploration. Annual expenditures during this period are displayed graphically in Diagram XII.3. The vigour with which the Province's business sector pursued opportunities arising from these expenditures is also evident in Diagram XII.3 from the number of new, oil and gas related businesses formed during that period.

The number of new businesses formed to meet the needs of the oil and gas industry following the 1979 discovery of Hibernia varied from a low of 36 in 1979 to a high of 70 in 1981. Many international and national companies established regional offices in the Province to provide specialized products and services from sites close to offshore drilling and development activities. However, many enterprising Newfoundlanders also established oil and gas related businesses in response to the opportunities offered by a major offshore oil and gas exploration and development program. Although expenditures declined in 1987, the number of oil and gas related new businesses formed remained unchanged from 1986 at 40.

The types of products and services on which oil and gas exploration expenditures were made from 1979 to 1984 (most recent year available) are outlined in Table XII.1. The largest expenditure category is for contracted drilling services which accounted for 45.8 percent of total expenditures over the 1979 to 1984 period. The share of this expenditure category has declined in recent years as lower levels of exploration activity have resulted in an excess supply of drilling contractors and consequent downward pressure on the price of these services. This decline in the cost of contracted drilling services is partly responsible for the fall off in exploration expenditures off the coast of Newfoundland and Labrador.

Diagram XII.4



The expenditures outlined in Table XII.1 can be grouped into three preference categories representing the ownership and/or operation of the businesses which captured these expenditures. These include Newfoundland and Labrador owned businesses in which Newfoundlanders have at least a 51 percent interest; Newfoundland and Labrador operated businesses, usually Provincially established subsidiaries of national or international firms; and 'other' businesses which are neither owned nor operated by Newfoundlanders.

The distribution of expenditures from 1979 to 1983, by preference category, is illustrated in Diagram XII.4. The share of expenditures captured by Newfoundland and Labrador owned and/or operated businesses increased

from 64 percent in 1979 to nearly 90 percent in 1983; this is consistent with the formation of a total of 272 oil and gas related businesses in that period. During 1983, the most recent year for which detailed information on preference category is available, Newfoundland and Labrador owned companies captured expenditures in 30 of the 49 types of products and services outlined in Table XII.1.

Table XII.1

TOTAL OFFSHORE OIL AND GAS EXPLORATION EXPENDITURES BY TYPE OF PRODUCT OR SERVICE, 1979 TO 1984(1)

Product Service Category	$'000,000s Spent	Percent of Total
1. Drilling Contractors	923.1	45.8
2. Supply Boat Lease	223.6	11.1
3. Fuel, Lubricants	98.6	4.9
4. Drilling Casing, String	86.3	4.3
5. Oilwell Equipment	78.0	3.9
6. Helicopter Rentals	66.7	3.3
7. Oilwell Logging	60.1	3.0
8. Drilling Fluids	52.9	2.6
9. Flowtesting & Equipment	37.5	1.9
10. Engineering Consultants	35.3	1.8
11. Seismic Processing	32.0	1.6
12. Diving Support	25.2	1.2
13. Bits	23.4	1.2
14. Wellhead Equipment	22.9	1.1
15. Cement & Services	21.7	1.1
16. Communications-General	21.7	1.1
17. Supply Base Services	18.0	0.9
18. Environmental Consultants	17.3	0.9
19. Site Survey Services	11.3	0.6
20. Oilfield Equipment	11.2	0.6
21. Other(2)	150.3	7.5
TOTAL	$2,017.1	100.0

(1) Detailed statistics are not yet available for 1985, 1986 and 1987.

(2) Includes 29 product/service categories for a total of 49 categories in all.

Source: Department of Development and Tourism.

Newfoundland and Labrador owned and/or operated companies captured expenditures in 38 of the 49 expenditure categories in 1983, covering a wide range of products and services provided to the oil and gas industry. Specialized types of services which have benefited most include consultants, aircraft services, weather services, supply base activities, equipment suppliers and food, catering and accommodation industries. The two largest components of expenditure, drilling contracting and supply boat leases, are captured by Newfoundland operated companies.

XII.1 OIL PRICE AND OFFSHORE DEVELOPMENT

It is fair to say that the most important factor in considering the commercial development of offshore resources, is the outlook for the price of oil. There are of course many other factors involved in a commercial development decision including technical risks, fiscal terms, inflation, interest rates, etc., but an acceptable oil price is a basic prerequisite. It is apparent that considerable uncertainty still prevails with respect to oil price. This is the consequence of a continuing over supply of oil in the world. A brief history of events leading up to the present situation might be of interest.

In 1985, the government of Canada abandoned the 'made-in-Canada' price philosophy which had prevailed since 1980. Under the National Energy Program the Canadian price for oil was regulated well below the international price. The higher cost to purchase imported oil, for Quebec and the Maritime provinces, at world price, was financed by a federal tax on exports of oil and gas from Western Canada to the United States. Under the current regime, Canada pays the world price for both domestic and imported oil with adjustments for quality and transportation. Thus Canada's oil price is dependent on factors largely determined outside of Canada.

Figure 1

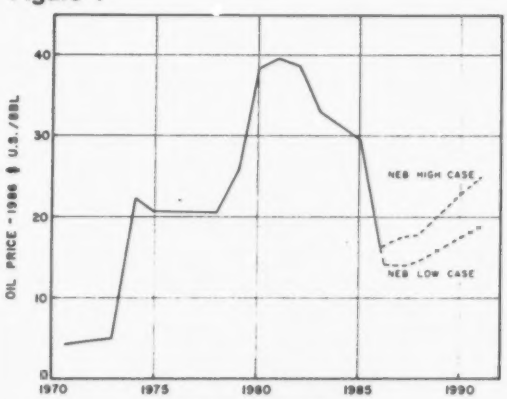


FIG. 1. WORLD OIL PRICE
FROM NEB CANADIAN ENERGY SUPPLY AND DEMAND (1986)

The main player in the determination of world oil price is the Organization of Petroleum Exporting Countries, or OPEC as it is usually called. This cartel consisting of 13 countries, had its roots in a conference called the First Arab Petroleum Congress, held in Cairo in 1969. The Congress was attended by representatives of four Arab countries and Venezuela. Its purpose was to reach an agreement to control supplies and therefore the price of oil in the world markets. Figure 1 shows the dramatic success achieved in 1973 - 1974 after an embargo was placed on exports from Arab countries to certain western countries, including the USA. The shortage caused the oil price to quadruple. Then in 1979 further supply restraints led the price to double to nearly $40 per barrel (in 1986 dollars). This dramatic increase in price led to two consumer reactions the results of which are depicted in Figure 2: (1) A major conservation effort and switch from oil to other energy sources took place which cut the world demand by 15 percent or 9 million barrels per day; and (2) A move by the non-OPEC producing countries was made to bring on alternate sources of supply, which became economic at the higher oil price level, and which reduced the world's dependence on OPEC supply.

Figure 2

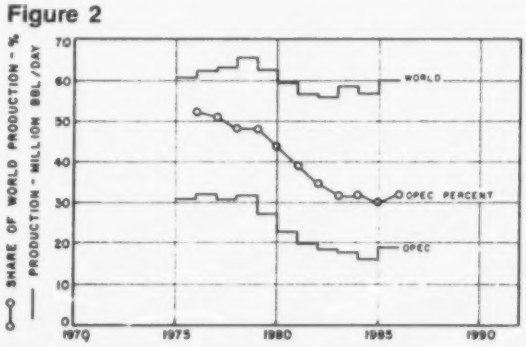


FIG. 2. PRODUCTION
FROM BP STATISTICAL REVIEW OF WORLD ENERGY (1987)

Figure 2 shows that OPEC's production dropped sharply from around 32 million barrels per day in 1979 to below 18 million barrels per day in 1985. Its share of the world market fell from 52 percent to around 30 percent. OPEC then opened the taps again to regain lost market. Under these circumstances the world price fell dramatically to below $15 per barrel by 1986 and some sales were in fact made at about $10 per barrel in July of that year. Obviously OPEC had little success during these years in maintaining discipline among its members in the face of falling market share and falling oil price - a double whammy. Iraq and Iran were particularly uncooperative since they both required oil revenues to finance their war efforts.

XII.1 (Cont'd) OIL PRICE AND OFFSHORE DEVELOPMENT

Figure 3

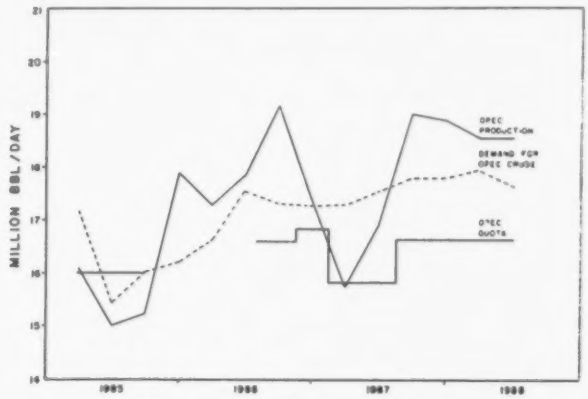


FIG. 3. OPEC QUOTAS AND PRODUCTION
FROM WORLD OIL MARKET ANALYSIS (JAN. 1988)
CANADIAN ENERGY RESEARCH INSTITUTE

By late 1986, as shown in Figure 3, OPEC had established quotas for its members at levels between 16 and 17 million barrels per day. This action had a stabilizing effect and the oil price started to recover. By mid 1987, it had risen to about $20 per barrel and there was a general perception in the petroleum world that greater stability was at hand once again.

The reality of the Iraq - Iran war however was not to be ignored. Although the OPEC quotas of 16.6 million barrels per day was maintained during the last half of 1987 - and later extended through the first half of 1988 - output increased to at least 18 to 18.5 million barrels per day. Iraq has declared that it will not limit output as long as the war continues.

Diagram XII.2 shows the recent price history for spot sales of West Texas Intermediate (WTI), a North American benchmark oil price. The deterioration of price since October, 1987 is apparent. In recent weeks crude oil has sold below $16 per barrel.

From the above picture, it is concluded that OPEC is unlikely to achieve discipline within its ranks to limit production - as long as the Iran - Iraq war continues. And even if relative market stability can be achieved following settlement of the hostilities, it will take unusual commitment by some of the other members to observe their OPEC quotas - so the prospect for a firming of price and relative stability in the market seems unlikely, at least during 1988.

From the longer term perspective, which is probably the most significant to Newfoundland, it is generally felt that an oil price of $15 per barrel or lower will not serve the needs of any of the OPEC nations. The price advance during 1987 is evidence that during relative stability in the market the price tends to rise to the $20 per barrel level and most observers would expect a gradual increase above that level as we move into the next decade.

It is unfortunate, but nevertheless a fact that the timing for development of Newfoundland's Grand Bank oil resources is so greatly affected by actions of nations far from our shores.

Contributed By

J.E. (Ted) Baugh, P. Eng., Chairman
Canada-Newfoundland Offshore Petroleum Board

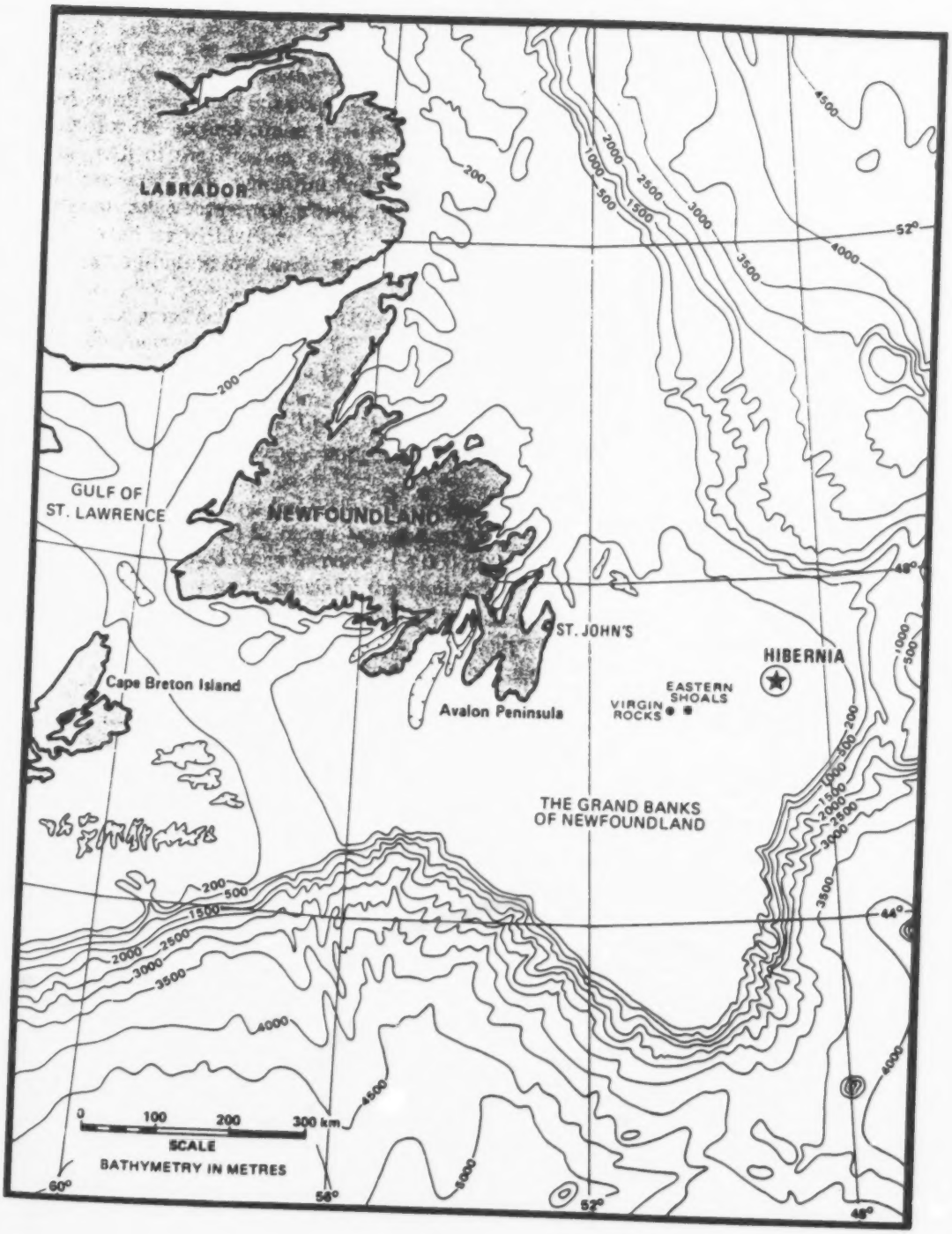
While a large proportion of the 'captured' expenditures are transferred outside the Province to purchase goods and services produced elsewhere, the percentage of total oil and gas expenditures actually staying in the Province (that is, the proportion of expenditures resulting in the purchase of locally produced goods and services) has improved from about 19.3 percent in 1979 to approximately 24 percent currently.

In preparation for the development and production phases of offshore oil and gas, the Canada/Newfoundland Offshore Development Fund Agreement was signed in February, 1986. The $300 million Agreement is being used to offset some of the costs of social and economic infrastructure required to ensure that the Province receives maximum economic benefit from the development of offshore oil and gas reserves. Some of the projects which have been approved or proposed under the Agreement to date relate to human resource development, research and development, industrial infrastructure, social infrastructure, and municipal and transportation infrastructure. Activities of this nature will further enhance the Province's ability to derive maximum benefit from the development of offshore oil and gas reserves.

Clearly, oil and gas exploration activities have led to the development of a new and vibrant industry within the economy of Newfoundland and Labrador. This in itself has been of tremendous benefit to the Province in terms of the employment and incomes generated. Perhaps even more importantly, however, many Newfoundland and Labrador owned or operated companies are now well positioned to service the present and future needs of the offshore oil and gas industry. Moreover, the experience and expertise developed in both the private and public sectors from past offshore oil and gas exploration activities will serve the Province well in the future as development proceeds.

The Government of Newfoundland and Labrador is optimistic concerning the development of offshore oil and gas reserves. Petro Canada's ongoing delineation drilling activities and announced intention to develop the Terra Nova field, which has commercial potential, represents a significant boost to the Province. In addition, the Hibernia fiscal negotiations between the Federal and Provincial Governments and Mobil and its partners are proceeding. A decision is expected soon on whether or not the fiscal arrangements are such as to permit early project release. The Province believes that the operator, after considering various technical, financial and economic factors including projected petroleum prices, intends to commence development of the field upon reaching agreement on the fiscal regime. The development phase of the Hibernia field is expected to take six years and require capital expenditures in excess of $5 billion in constant 1986 dollars, or nearly $8 billion in 'as spent' dollars. Development of both fields would generate substantial employment and industrial benefits for the Province.

MAP XII.1


LABRADOR
GULF OF
ST. LAWRENCE
NEWFOUNDLAND
ST. JOHN'S
HIBERNIA
Cape Breton Island
Avalon Peninsula
EASTERN
SHOALS
VIRGIN
ROCKS
THE GRAND BANKS
OF NEWFOUNDLAND
200
500
1000
1500
2000
2500
3000
3500
4000
4500
52°
48°
44°
60°
56°
52°
48°
0
100
200
300 km
SCALE
BATHYMETRY IN METRES

XIII. CONCLUSION

The past year was marked by continuing improvement in the Provincial economy as real Gross Domestic Product grew for the fifth consecutive year. In 1987, real Gross Domestic Product increased by an estimated 2.6 percent from its level in 1986. Annual average employment increased by 5,000 for the second consecutive year while the unemployment rate fell to 18.6 percent, a five year low. All of the Province's key resource based industries benefited from strong world commodity prices for fish, newsprint and minerals. Gains in personal income and a high level of consumer confidence supported growth in the service sector, especially the retail trade industry. The value of retail trade increased by 11.3 percent. This favourable economic climate was further enhanced by continuing low levels of interest and inflation rates.

While the gains achieved in 1987 were significant, a number of difficult and unsolved problems remain. The unemployment rate fell to a five year low in 1987, however, unemployment levels in the Province continue to be high by any standard of comparison. The problems faced by the labour intensive inshore fishery in some areas of the Province continue to present a challenge to both policymakers and the industry alike. Furthermore, growth of the public sector is restrained at both levels of government by sizeable budget deficits on current account.

Nevertheless, economic growth seems assured in the short term as the Province builds upon the economic gains achieved in recent years. Real GDP is expected to expand by 2.2 percent which should be accompanied by an increase of 4,000 in the annual average level of employment. The international economy, and especially the United States, is expected to experience real economic growth again in 1988 and this will translate into strong demand for resource based products. The volume of fish products is expected to rise as a result of an increase in the total allowable catch of Northern Cod and increased utilization rates. The pulp and paper mill modernization program is proceeding on schedule and the resulting gains in efficiency, productive capacity and product quality will ensure the long term viability of the Province's forest industry. The mining industry, and particularly the iron ore industry, has undergone a period of rationalization and the gains in productivity and efficiency achieved have improved the industry's competitive position. Furthermore, an early release of the Hibernia or Terra Nova projects would considerably enhance the investment climate in the Province and serve to increase Gross Domestic Product growth which is forecast at about 2.2 percent in 1988. Overall, the outlook is for continued improvement in 1988 as growth in the goods producing sector continues to provide stimulus for the service industries.

Appendix 1

AN INVENTORY OF MAJOR PROJECTS NEWFOUNDLAND AND LABRADOR

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Agnes Pratt Home - Extension	St. John's	8.8	1987/1988	136 new beds will be added, some of which will be replacements.
Air Terminal Building	Deer Lake	5.4	1988/1990	Approximately $2.8 million will be spent in 1988/1989 and will include site parking and a roadway system.
Baie Verte Highway Depot	Baie Verte	1.3	1986/1988	Provincial funding.
Bilingual School	Port au Port Peninsula	2.5	1988/1989	75% Federal funding, 25% Provincial funding.
Botwood Chronic Care and Medical Clinic Facility	Botwood	8.5	1986/1988	Includes 74 beds. Provincial funding.
Bridges and Causeways Construction	Locations within the Province	4.5	1988/1989	Various projects. Provincial funding.
Central Newfoundland Hospital - Redevelopment	Grand Falls	20.8	1986/1989	Provincial funding.
Closed Custody Facility for Young Offenders	Uncertain	8.0	1988/1990	Provincial funding.
CNIB Building	St. John's	1.5	1987/1988	Funding provided by Province, by local and national CNIB and by private fund raising activity.
Conception Bay South Pool Complex	Long Pond, Conception Bay South	2.7	1987/1988	This centre will contain such facilities as a swimming pool, sauna, exercise rooms and squash courts. Centre will also contain special facilities for the handicapped, such as a ramp to assist in entry into the pool. Provincial and Municipal funding as well as private fund raising.
Confederation Building - East Block Renovations	St. John's	28.5	1986/1991	Renovations to existing offices and House of Assembly. Provincial funding.
Corner Brook Pulp and Paper Mill Modernization Program	Corner Brook	300.0	1985/1990	Involves the installation of new equipment and improved processes. The Federal and Provincial governments will contribute $45.6 million of total cost. Balance paid by the company. As of December 31, 1987, $155.8 million had been spent of this program.
Department of National Defence - Goose Bay Airport	Goose Bay, Labrador	93.0	1987/1994	Joint program of Department of National Defence, Transport Canada and Public Works Canada. South side of airport will be upgraded for use as a Canadian Forces Base. A detachment of CF-18 fighter aircraft to be deployed there. The North side of airport is to become civilian at a cost of $24 million from 1987/1992 by Transport Canada. Funding will provide for upgraded roads, buildings, runways, main operating areas, fuel and water systems.
Department of National Defence - Northern Warning Stations	Saglek & Cartwright, Labrador	65.0	1986/1988	Cost of the two stations include only construction costs and not radar equipment. Federal funding.
Fish Plant	Makkovik	4.0	1988/1991	Preliminary design and engineering work to be completed this summer with construction to take place over the next two years. Plans call for the reconstruction of existing plant. Funded under ERDA for Inshore Fisheries. 70% Federal, 30% Provincial funding.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Fish Plant	Nain	3.0	1988/1991	Preliminary design and engineering work to be completed this summer with construction to take place over the next two years. Plans call for the upgrading and expansion of existing plant. Funded under ERDA for Inshore Fisheries. 70% Federal, 30% Provincial funding.
Forest Resource Roads	Locations within the Province	2.2	1988/1989	Provides various roads for silviculture work under the new ERDA Agreement. 70% Federal, 30% Provincial funding.
Freight Shed	Goose Bay	1.4	1988/1989	Cost includes the demolition of five existing freight sheds at Goose Bay. Once completed, a new freight shed will be erected at the site.
General Airport Repairs	St. John's Airport	2.0	1988/1989	Includes the rehabilitation of airport terminal building apron and taxiway G. Resurfacing taxiways and apron in the general aviation area. Rehabilitate runways 02/20 and taxiways F and D.
General Services Building	St. John's Airport	5.6	1988/1989	This project will provide a common building to house marine, aviation and weather forecasting services. The expenditure is part of the airport master plan formulated in 1984 and expected to continue until the year 2000. Plans call for the building of a new air/terminal building. Total cost of the airport master plan is estimated at $100 million.
German Air Force - Planned Expenditures	Happy Valley-Goose Bay	40.7	1987/1990	Expenditures include the construction of the German Air Force Hangar 5 at a cost of $35 million, renovation of Hangars 4 & 6, renovation of B478 Social Club and renovation of B273 operational workshops.
Glenbrook Villa	St. John's	1.2	1987/1988	Includes a 20 apartment facility for seniors. Phase 1 of a 2 phase development project of the Glenbrook Lodge.
Golden Heights Manor - Extension	Bonavista	3.4	1987/1988	Extension will add 40 new beds to the existing 25.
Government Store	Hopedale	1.1	1986/1988	Federal-Provincial funding through the Native Peoples' Agreement. 46% Federal, 54% Provincial funding.
Governors Park	Salmonier Line	6.9	1988/1989	Will include the training of personnel in the hospitality industry and the construction of a resort including recreational facilities, campsites and hotel. Provincial, Federal and private funding.
Gros Morne National Park	Great Northern Peninsula	Uncertain	1988/1989	Work could include the erection of a recreational complex to be located approximately 3 kms. north of Rocky Harbour. When initiated, such a project would take about two years to complete. Other capital expenditures would include general park upkeep, campground enhancements, ski trail and hiking trail development.
Highway Improvement and Construction	Locations within the Province	21.1	1988/1989	A variety of projects undertaken by the Province. Provincial funding.
Hope Brook Gold Mine	Cinq Cerf Brook, Southwest Coast	162.0	1986/1988	Includes construction of a mine, mill, dock facilities and living quarters. Some Federal and Provincial funding.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Industrial Infrastructure Planning	Argentia and Adams Head/Come By Chance	1.3	1987/1988	Pre-engineering and design work related to the possible Hibernia development sites of Argentia (major steel fabrication yard) and Adams Head/Come By Chance (gravity based system construction facility). 75% Federal, 25% Provincial funding.
Labrador Airport Programs	Labrador Communities	2.6	1988/1989	General restoration, equipment shelters and installation of lights. Federal funds.
Limestone Quarry	Lower Cove, Port-au-Port Peninsula	20.6	1988	Establishment of mining, processing and crushing facility as well as construction of a deep water shipping facility by Newfoundland Resources and Mining Company Limited. Approximately 9% of the project cost is in the form of assistance from the Federal Government under the Atlantic Enterprise Program.
Marine Facilities Repair and Maintenance Projects	Various locations within the Province	3.1	1988/1989	These projects will involve repairs and the maintenance of various marine facilities such as sheds, breakwaters and docks. Federal funds.
Marine Service Center Program	Locations within the Province	20.0	1988/1992	Improvements to existing marine service centers will be made and other new marine service centers will be established at locations yet to be determined. Improvements will consist mainly of paving, facility expansion and general upgrading. Funded under ERDA for Inshore Fisheries. 70% Federal, 30% Provincial funding.
Memorial University of Newfoundland - Centre for Earth Resources Research	St. John's	25.0	1987/1989	The 135,000 sq. ft. building (classrooms and laboratory) will house the Earth Science Resource Centre at MUN. 75% Federal, 25% Provincial funding.
Memorial University of Newfoundland - Centre for Offshore and Remote Medicine and Telemedicine	St. John's	2.7	1987/1989	This project involves the construction of a new facility on the campus of Memorial University which will contain a hyperbaric medicine facility and other offshore related medical equipment. 75% Federal, 25% Provincial funding.
Motor Vehicle Registration Building	Mount Pearl	9.1	1987/1988	Provincial funds.
Nain Recreation Centre	Nain, Labrador	1.4	1987/1989	Centre will contain ice arena, heated change rooms, bleacher seats and canteen and town office. Some Provincial funding.
National Research Council's Institute of Marine Dynamics - Wave Generating System	St. John's	10.6	1987/1990	Construction and installation of a wave generator at the National Research Council's Institute of Marine Dynamics. The National Research Council has committed $7.07 million for the project with the remaining $3.5 million funded through the Offshore Development Fund.
New Community Health Centre	Roddickton	1.6	1988/1989	Out-patient clinic. $100,000 was spent in planning for 1987/1988. Replacement of existing community health centre. Provincial funding.
New Courthouse	Grand Falls	1.8	1988/1990	Provincial and private funding.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Newfoundland and Labrador Housing Corporation - Housing and Land Development	Locations within the Province	79.3	1988/1989	This relates to the Corporation's capital expenditure program of which many programs are cost-shared on a 75/25 Federal/Provincial basis with NLHC's Federal counterpart Canada Mortgage and Housing Corporation (CMHC). The budget includes spending for the Rural and Native Housing Program, the Non-Profit Housing Program, the Residential Rehabilitation Assistance Program (RRAP), Residential Land Assemblies, Industrial Land Development, Modernization of the Corporation's rental portfolio and construction of group homes.
Newfoundland and Labrador Hydro - Generation Related	Paradise River, Roddickton and Holyrood	67.1	1987/1989	These projects include construction of an 8 mw hydroelectric facility on the Burin Peninsula at Paradise River, a 5 mw wood-chip generating station and associated transmission facilities at Roddickton and uprating of Units 1 and 2 at the Holyrood oil fired generating station from 150 mw to 175 mw each.
Newfoundland and Labrador Hydro - Head Office and Control Centre	St. John's	40.0	1987/1990	The project includes the construction of a 150,000 sq. ft. office building. This facility will house the head offices of the Hydro Group of Companies as well as an Energy Control Centre. Approximately 50% of the cost of this project is for the Energy Control Centre.
Newfoundland and Labrador Hydro - Transmission Related	Locations within the Province	19.9	1987/1988	These expenditures include improvements on terminal and transmitting systems and also includes the interconnection of Fogo and Change Islands with the Island's main electrical grid.
Newfoundland and Labrador Institute of Fisheries and Marine Technology - Marine Offshore Simulator Training Centre	St. John's	12.0	1987/1990	Centre will include a full-mission ship's bridge simulator as well as a ballast control simulator. 75% Federal, 25% Provincial funds.
Newfoundland Enviroponics Limited - Environmental Space Enclosure	Mount Pearl	18.4	1987/1988	Construction and installation of hydroponic facilities will be fully completed by April, 1988.
Newfoundland Light & Power Co. Limited - Capital Expenditures	Locations within the Province	50.0	1988	50% of this cost is for small distribution line extensions and reconstruction located throughout the Province. Also included are dam reconstruction projects and building extensions. Three large projects included in these figures are a new regional office, warehouse and service facility for St. John's at a total cost of $8.0 million ($4.5 in 1988); the installation of new 25 KV cable between Broad Cove and Bell Island at a cost of $2.5 million and the installation of a SCADA (Supervisory Control and Data Acquisition) system to provide remote control of substations and plants in central and western Newfoundland at a cost of $1.6 million.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Newfoundland Telephone - Construction Program	Locations within the Province	58.8	1988	These expenditures will be spent at a number of exchange and radio locations. They will provide the telephone sets, outside plant cable, exchange and circuit equipment for local and long distance calling. They will also provide for the modernization of the telephone network and the introduction of new business and residence services.
Office/Hotel/Mall Complex	Goose Bay	3.5	1988/1989	Project still in planning phases.
Offshore Survival Centre	Little Soldiers Pond, Foxtrap	5.0	1987/1990	This project includes the development of a fire ground and complex, with training facilities. Completion is scheduled for spring, 1990. 75% Federal, 25% Provincial funding.
Petroleum Technology Training Program	Across the Province	21.1	1987/1990	Upgrade existing post-secondary technology training facilities and establish new programs and training facilities related to the offshore petroleum industry. 75% Federal, 25% Provincial funding.
Port-aux-Basques Water Supply	Port-aux-Basques	9.8	1985/1988	Provide water treatment plant for Port-aux-Basques as well as other water treatment programs. 76% Federal, 24% Provincial funding.
Quidi/Vidi Rennies River Development Foundation Recreation and Conservation Program	Long Pond to Quidi Vidi Lake	5.0	1985/1995	New bridge over Rennies River has been completed. Project also includes the Newfoundland Freshwater Resource Centre which will cost $1.5 million. Centre will include offices, 1 1/2 floors of displays, lounge and lower stream tank. Program also includes a Quidi Vidi Lake Major Park Project and job development training programs. Some Federal, Provincial and Municipal funding, as well as private fund raising.
Resurfacing Runway	Gander	3.0	1988/1989	Will involve the resurfacing of runway 11/31.
Road and Bridge Rehabilitation	Locations within the Province	14.4	1988/1989	Various projects. Provincial funds.
Road Paving Projects - Department of Municipal Affairs	Locations within the Province	10.0	1988/1989	Includes $3.6 million carryovers on existing projects. Provincial and Municipal funding.
Ropewalk Place	St. John's	3.5	1987/1989	70,000 sq. ft. shopping mall.
Royal Air Force - Planned Expenditures	Happy Valley-Goose Bay	3.2	1987/1990	Expenditures include ramp repairs, renovations of B1071 explosive storage area, extention of engine bay Hangar 8, resurfacing of various areas and construction of a fire escape for Hangar 8.
Royal Canadian Mounted Police - Capital Construction Program	Locations within the Province	5.9	1988/1989	Includes expenditures on various detachments and married quarters for the fiscal year. Two of the largest projects included in these expenditures are the Bonavista and Harbour Grace Detachments. Federal funds.
Royal Netherlands Air Force - Planned Expenditures	Happy Valley-Goose Bay	1.2	1987/1990	Expenditures include renovations of Barrack Block 311 and construction of commanding officer's residence.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Samaritan Place	Gander	25.0	1988/1990	Complex is being designed for retired couples and will be dedicated to the memory of the soldiers of the 101st Airborne Division of the United States Army. Complex will contain 200 apartments, a 50 bed convalescent care unit and sports facilities. Funded by Gander-Masonic Memorial Complex Inc. and by private fund raising activity.
School Construction	Locations within the Province	20.0	1988/1989	Provincial funding.
School of Fine Arts, Sir Wilfred Grenfell College	Corner Brook	7.0	1985/1988	Construction began in 1986. Provincial funds.
Sir Humphrey Gilbert Building	St. John's	10.0	1987/1990	Restoration on both the exterior and interior of the building. Also new mechanical and electrical systems will be installed. Federal funds.
Small Craft Harbours Revitalization Program	Locations within the Province	35.0	1987/1990	Construction and repairs of wharves, breakwaters and slipways throughout the Province. Approximately $10.5 million will be spent in 1988/1989. Federal funding.
St. George's Recreation Centre	St. George's	1.5	1987/1989	Centre will include recreational ice surface, bowling lanes and lounge space. Some Provincial funding.
St. John's Citadel	St. John's	2.2	1987/1988	Construction of a Worship and Christian Education Centre by the Salvation Army.
St. John's Courthouse	St. John's	3.7	1985/1988	Restoration work. Provincial funds.
St. John's Port Corporation - Main Terminal Redevelopment Program	St. John's	10.5	1984/1988	This redevelopment program consists of three phases. Phases I & II have been completed at a cost of approximately $8.5 million. Phase I involved the removal of sheds and buildings, the installation of water mains and security lights and general surface repairs. Phase II consisted of the complete removal of asphalt/concrete paving and the replacement of a new asphalt surface. Phase III will consist of the construction of a new marine fendering system around all wharf faces. Phase III will begin this year and be completed in the fall. Total funding by the St. John's Port Corporation.
Subsidiary Agreement on Highways Development	Trans Canada Highway and Trans Labrador Highway	186.0	1984/1992	Approximately $15 million was allocated for the first and last years of the agreement with various amounts to be spent in each of the intervening years. To date, approximately $81.4 million has been spent under the program. The program is designed to provide for the reconstruction, upgrading and paving of various sections of the Trans Canada Highway and Trans Labrador Highway. 62.5% Federal, 37.5% Provincial funding.
Subsidiary Agreement on Ocean Industries	Locations across the Island	1.0	1988/1989	Incentives aimed at improving ocean related industries. One of the biggest single projects will include the upgrading of a shipyard (Gallants Marine Fisheries Limited) located on the west coast of the Province.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Super Puma Helicopter Flight Simulation Centre	St. John's	14.6	1987/1989	Project involves support to CHC Helicopter Corporation for the establishment of a world-class Super Puma Helicopter Flight Simulation Centre. The Centre is designed to provide offshore safety and training related to petroleum exploration and development as well as military, commercial and search and rescue applications. The Offshore Development Fund will contribute $4.2 million in equity, while CHC Helicopter Corporation will provide $2.1 million in equity. The Provincial Government will provide an $8.3 million loan guarantee.
Terra Nova Shoes Limited - Plant Expansion and Machinery	Harbour Grace	4.5	1987/1989	Establishment of new molding machinery. To accommodate this machinery, plant size will be expanded. 51% of this project will be funded by a Provincial Government equity infusion.
Terra Transport - Improvements to Newfoundland Railway	Locations across the Island	11.6	1988/1989	Repairs to track and rolling stock, including locomotives, new ballast and railway tie programs. 100% Federal funding.
Tourism Development Projects	Locations within the Province	1.0	1988/1989	Incentives aimed at developing tourist infrastructure (attractions and accommodations). Funded under the Tourism Development Subsidiary Agreement. 70% Federal, 30% Provincial funding.
Unified Family Court Facility	St. John's	1.6	1988/1989	To replace the original facility which was destroyed by fire. Will house the Unified Family Court and auxiliary type functions. Provincial funding.
United States Air Force - Planned Expenditures	Happy Valley - Goose Bay	39.6	1988/1990	Expenditures include ramp and taxiway repairs at a cost of $35 million, refurbishing of the hydrant system on ramps 3A/4A, roof replacement on various buildings as well as replacement of Mole Hole back-up power.
Upgrading existing Airport Infrastructure	Gander	1.0	1988/1989	Will include the upgrading of existing sewage treatment system and fire training area.
Water and Sewer Projects	Nain, Makkovik, Postville, Rigolet and Hopedale	2.6	1988/1989	Construction will begin this year on a water and sewer system in Hopedale. Extensions will be made in the other four communities. Funding is provided through the Native Peoples' Agreement and is cost shared 66% Federal and 34% Provincial.
Water and Sewer Projects - Department of Municipal Affairs	Locations within the Province	33.0	1988/1989	Includes $14.4 million in carryovers on existing projects. Provincial and Municipal funding.
Wharf Restoration	Argentia	4.6	1988/1990	Approximately $2.0 million will be spent in 1988/1989 to restore and upgrade 1,000 feet of the Fleet Dock.
Wharf Restoration	Fox Harbour/St. Lewis	1.8	1988/1990	Approximately $1.4 million will be spent in 1988/1989 to reconstruct the coastal dock.

AN INVENTORY OF MAJOR PROJECTS IN NEWFOUNDLAND AND LABRADOR

Project	Location	Estimated Capital Cost ($ Millions)	Start/End Date	Comments
Wharf Restoration	Long Pond, Conception Bay South	3.2	1987/1990	Phase I has been completed at a cost of $0.3 million. Phase II will begin in 1988 and $2.0 million will be spent in 1988/89 to restore the wharf at Long Pond. The remaining work and money will be committed in 1989/90.

Appendix 2

SUMMARY OF BUILDING PERMITS AND THEIR ESTIMATED VALUE OF CONSTRUCTION, FOR SELECTED MUNICIPALITIES, 1987

Appendix 2

SUMMARY OF BUILDING PERMITS AND THEIR ESTIMATED VALUE OF CONSTRUCTION, FOR SELECTED MUNICIPALITIES, (1987)

	Corner Brook			Grand Falls			Gander		
	1987 # PERMITS	1987 $ (000's)	1986 $ (000's)	1987 # PERMITS	1987 $ (000's)	1986 $ (000's)	1987 # PERMITS	1987 $ (000's)	1986 $ (000's)
Commercial	*	*	*	8	346.0	1,765.0	36	2,131.7	1,392.0
Industrial	*	*	*	2	1,570.0	225.0	0	0.0	0.0
Subtotal	111[1]	4,670.4[4]	1,086.4[4]	10	1,916.0	1,990.0	36	2,131.7	1,392.0
Residential	654	8,531.2	5,085.5	156	3,666.6	2,948.5	196	3,733.3	2,820.1
Institutional and Government	19	9,452.7	2,649.0	0	0.0	16,352.0	8	764.7	1,517.9
Total	784	22,654.4	8,820.9	166	5,582.6	21,290.5	240	6,629.7	5,730.0

[1] Includes Commercial and Industrial buildings.
[2] Includes the number of permits for Commercial, Industrial and Institutional improvements and repairs.
[3] Includes 35 subsidiary apartments and 4 apartment house/housing complex demolitions.
[4] Includes Accessory building permits and permits for miscellaneous activity such as fencing, sign installation and swimming pools.
[5] Includes only value of new residential and commercial and not such activity as renovations and extensions.
[6] Includes new construction and carry-over from 1985/1986.
Numbers may not add to totals due to rounding.

Source: Municipal Governments of Corner Brook, Grand Falls, Gander, Mount Pearl, Conception Bay South and St. John's; Economic Research and Analysis Division, Cabinet Secretariat.

Appendix 2

SUMMARY OF BUILDING PERMITS AND THEIR ESTIMATED VALUE OF CONSTRUCTION, FOR SELECTED MUNICIPALITIES, (1987)

Mount Pearl			Conception Bay South			St. John's			Total		
1987 # PERMITS	1987 $ (000's)	1986 $ (000's)	1987 # PERMITS	1987 $ (000's)	1986 $ (000's)	1987 # PERMITS	1987 $ (000's)	1986 $ (000's)	1987 # PERMITS	1987 $ (000's)	1986 $ (000's)
110[7]	4,699.4	6,582.3	49	3,460.0[8]	3,764.0	518	49,442.7[9]	55,182.0[10]	*	*	*
4	1,395.0	1,836.5	0	0.0	0.0	0	0.0	0.0	*	*	*
114	6,094.4	8,418.8	49	3,460.0	3,764.0	518	49,442.7	55,182.0	838[1]	67,715.1[1]	71,833.2[2]
472	12,833.4	11,476.6[3]	507[4]	7,849.0[5]	11,414.0	1,866	44,055.6[7,9]	47,785.5[11,12]	3,851	80,669.1	81,530.2
7	7,814.8	1,917.0	0	0.0	0.0	23	34,071.9[9]	19,505.4[10]		57	52,104.2
593	26,742.6	21,812.4	556	11,309.0	15,178.0	2,407	127,570.2	122,472.9	4,746	200,488.4	195,304.7

[7] Includes 188 subsidiary apartments.
[8] Includes 92 row/semi-detached units.
[9] Includes new and renovations to institutional and government buildings in addition to government buildings which did not receive Council approval or obtain permits.
[10] Includes New Construction 1986 and carry-over from 1985.
[11] Includes 269 apartments in dwellings.
[12] Includes 145 New and Renovation apartment building units and 83 row housing/semi detached/duplex units.

Appendix 3

SELECTED ECONOMIC INDICATORS:

TRANSPORTATION INDUSTRY

NEWFOUNDLAND AND LABRADOR

Table 1: MODAL SHARE DISTRIBUTION OF GENERAL FREIGHT SHIPMENTS TO NEWFOUNDLAND & LABRADOR

	1980			1981			1982			1983		
	Units	Tonnes(9)	%	Units	Tonnes	%	Units	Tonnes	%	Units	Tonnes	%
Rail (1)												
1) Rail cars loaded (2)		218,417			198,868			174,234			159,536	
2) Containers(3)												
20 foot	69	571		73	604		1,051	8,695		2,875	23,785	
40 foot							3,066	50,727		8,126	134,445	
3) New vehicles(4)	6,720	10,080		6,600	9,900		4,658	6,987		7,105	10,658	
Total Rail		229,068	34.8		209,372	30.5		240,643	32.8		328,424	38.1
Truck(5)												
1) Straight truck(6)	3,004	16,372		2,939	16,018		2,479	13,511		2,661	14,503	
2) Tractor-trailers(7)	9,337	145,144		9,958	154,797		9,713	150,989		10,412	161,855	
3) Trailers only(7)	8,126	126,319		8,335	129,568		7,358	114,380		7,849	122,013	
Total Truck		287,835	43.7		300,383	43.8		278,880	38.0		298,371	34.6
Total Direct Water(8)		141,570	21.5		176,232	25.7		214,220	29.2		235,843	27.3
GRAND TOTAL		658,473	100.0		685,987	100.0		733,743	100.0		862,638	100.0

(1) Total rail freight coming into the Province via Marine Atlantic through the ports of Port-aux-Basques (all year) and Argentia (summer months only).
(2) Actual tonnage.
(3) Metric tonnage based on each 40 ft. container holding 16.545 mt. and each 20 ft. container holding 8.273 mt.
(4) Metric tonnage based on each vehicle averaging 1.5 mt.
(5) Total truck freight coming into the Province via Marine Atlantic through the ports of Port-aux-Basques (all year) and Argentia (summer months only).
(6) Metric tonnage based on each straight truck holding 5.45 mt.
(7) Metric tonnage based on each tractor-trailer or trailer holding 15.545 mt.
(8) Total direct water freight excludes liquid, bulk freight and represents only general cargo coming into the Port of St. John's.
(9) Metric tonnes.

Source: Economic Research & Analysis Division, Cabinet Secretariat

MODAL SHARE DISTRIBUTION OF GENERAL FREIGHT SHIPMENTS TO NEWFOUNDLAND & LABRADOR (Cont'd)

	1984			1985			1986			1987		
	Units	Tonnes(9)	%	Units	Tonnes	%	Units	Tonnes	%	Units	Tonnes	%
Rail (1)												
1) Rail cars loaded (2)		126,627			102,729			71,399			41,447	
2) Containers(3)												
20 foot	3,218	26,623		3,103	25,671		2,389	19,764		1,868	15,454	
40 foot	10,997	181,945		10,351	171,257		10,665	176,452		9,774	161,711	
3) New vehicles(4)	7,316	10,974		8,183	12,275		7,766	11,649		7,847	11,771	
Total Rail		346,169	40.3		311,932	35.4		279,264	32.7		230,383	22.9
Truck(5)												
1) Straight truck(6)	2,226	12,132		1,902	10,366		1,868	10,181		1,923	10,480	
2) Tractor-trailers(7)	10,568	164,280		11,639	180,928		12,607	195,976		15,258	237,186	
3) Trailers only(7)	7,953	123,629		8,415	130,811		9,486	147,460		11,510	178,923	
Total Truck		300,041	34.9		322,105	36.5		353,617	41.4		426,589	42.4
Total Direct Water(8)		212,900	24.8		248,090	28.1		220,472	25.8		349,624	34.7
GRAND TOTAL		859,110	100.0		882,127	100.0		853,353	99.9		1,006,596	100.0

(1) Total rail freight coming into the Province via Marine Atlantic through the ports of Port-aux-Basques (all year) and Argentia (summer months only).
(2) Actual tonnage.
(3) Metric tonnage based on each 40 ft. container holding 16.545 mt. and each 20 ft. container holding 8.273 mt.
(4) Metric tonnage based on each vehicle averaging 1.5 mt.
(5) Total truck freight coming into the Province via Marine Atlantic through the ports of Port-aux-Basques (all year) and Argentia (summer months only).
(6) Metric tonnage based on each straight truck holding 5.45 mt.
(7) Metric tonnage based on each tractor-trailer or trailer holding 15.545 mt.
(8) Total direct water freight excludes liquid, bulk freight and represents only general cargo coming into the Port of St. John's.
(9) Metric tonnes.

SOURCE: Economic Research & Analysis Division, Cabinet Secretariat

Table 2: AIRPORTS, AIRSTRIPS AND WATER AERODROMES LOCATED IN NEWFOUNDLAND AND LABRADOR IN 1987

NEWFOUNDLAND AIRPORTS

Baie D'Espoir
Black Tickle
Bonavista
Cartwright
Charlottetown
Davis Inlet
Fogo
Fox Harbour
Hopedale
Makkovik
Mary's Harbour
Nain
Paradise River
Port aux Choix
Port Hope Simpson
Postville
Red Bay
Rigolet
Springdale
Wabana
Winterland
L'Anse au Clair-Blanc Sablon
St. Lewis-Seal Bight
Sawbill
Embar
Ross Bay Junction

NEWFOUNDLAND AIRPORTS - FEDERAL(1)

Churchill Falls
Deer Lake
Gander
Goose Bay
St. Anthony
St. John's
Stephenville
Wabush

NEWFOUNDLAND AIRPORTS /AIRSTRIPS - PRIVATE OR ABANDONED (2)

Argentia
Border Beacon
Buchans
Conche
Forteau
Frenchman's Cove
Harbour Grace
Portland Creek
Saglek
Sandy Cove
St. George's

NEWFOUNDLAND WATER AERODROMES

Baie Verte (Unlicensed)
Catalina Harbour (Unlicensed)
Davis Pond
Fogo Island (Unlicensed)
Gander (Licensed)
Ocean Pond (Licensed)
Pinchgut Lake (Licensed)
Port Saunders (Unlicensed)
Roddickton (Unlicensed)
St. John's
South Brook (Licensed)
Stephenville (Unlicensed)
Grand Bay
Millertown Junction

Source: Department of Transportation

(1) Owned and maintained by Transport Canada

(2) No organization responsible for maintenance of facility.

Table 3: FEDERAL AND PROVINCIAL VESSELS OPERATING COASTAL NEWFOUNDLAND AND LABRADOR - 1987

MARINE ATLANTIC (UNDER CONTRACT TO TRANSPORT CANADA)

Port-aux-Basques/Argentia - North Sydney, Nova Scotia

Caribou	Passenger & Vehicle Service (Port-aux-Basques)
Atlantic Freighter	Freight & Vehicle Service (Port-aux-Basques)
John Hamilton Gray	Passenger & Vehicle Service (Port-aux-Basques)
Ambrose Shea	Passenger & Vehicle Service (Argentia)

South Coast (Port-aux-Basques to Terrenceville)

Marine Courier	Passenger Service (May-November)
Marine Runner	Passenger Service (May-December)
Marine Eagle	Freight Service (May-December)
Tavenor(1)	Passenger (December-April)
Marine Packer(1)	Freight (January-May)

North Coast (St. John's - Lewisporte & North/South Coast Labrador)

Sir Robert Bond	RO/RO Service (Lewisporte-Goose Bay)
Northern Ranger	Passenger & Freight (Lewisporte-Nain)
Tavenor	Passenger & Freight (Lewisporte-Goose Bay)
Marine Packer	Freight (St. John's-Rigolet)
Duke of Topsail	Container Freight Service (Lewisporte-Nain)
Kloster	Freight (Lewisporte-Black Tickle)
Astron	Freight (St. John's-Goose Bay)
Terra Nova	Freight (St. John's-Nain)
Marine Transport(2)	Freight (St. John's-Nain)
Tarros Cedar(3)	Freight (St. John's-Goose Bay)

PROVINCIAL GOVERNMENT

Beaumont Hamel	Vehicular Ferry (Fogo-Farewell)
Gallipoli	Vehicular Ferry (Ramea, Burgeo, Grey River)
John Guy	Vehicular Ferry (Bell Island-Portugal Cove)
Katherine	Vehicular Ferry (Bell Island-Portugal Cove)
Hamilton Sound	Vehicular Ferry (Swing Vessel)
Sound of Islay	Vehicular Ferry (Swing Vessel II)
Inch Arran	Vehicular Ferry (Little Bay Islands-Shoal Arm)
Green Bay Transport	Vehicular Ferry (St. Brendans-Burnside)
Island Joiner	Vehicular Ferry (Long Island-Pilleys Island)
Agnes and Anne	Vehicular Ferry (Change Islands-Farewell)
Linda Ann II	Passenger Ferry (Gaultois-Hermitage)

COAST GUARD (TRANSPORT CANADA)

John Cabot	Cable Ship/Heavy Icebreaker
Sir John Franklin	Heavy Icebreaker
Sir Humphrey Gilbert	Medium Icebreaker/Aids Tender/Supply
Bartlett	Aids Tender/Supply Vessel
Skidegate	Aids Tender
Grenfell	Offshore Search & Rescue
Jackman	Offshore Search & Rescue
Burgeo	Shore Stationed Search & Rescue Lifeboat
Burin	Shore Stationed Search & Rescue Lifeboat
Harp	Shore Stationed Search & Rescue Vessel
Hood	Shore Stationed Search & Rescue Vessel

DEPARTMENT OF FISHERIES & OCEANS

Patrol Vessels

Badger Bay	Groswater Bay
Belle Bay	Cape Roger
Burin Bay	Leonard J. Cowley
Cratena	Pistolet Bay
Gander Bay	Goose Bay

Research Vessels

Shamook
Marinus
Wilfred Templeman

Hydrographic Vessel

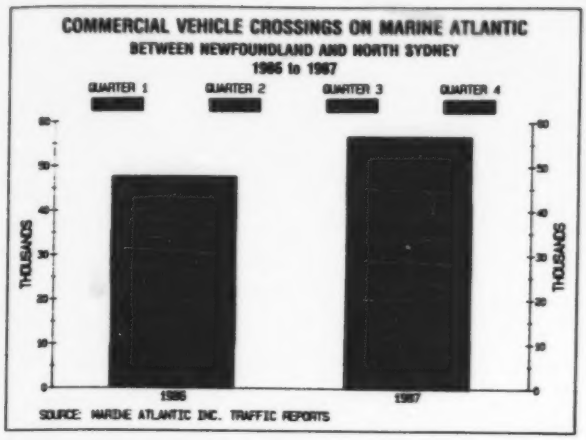
Maxwell

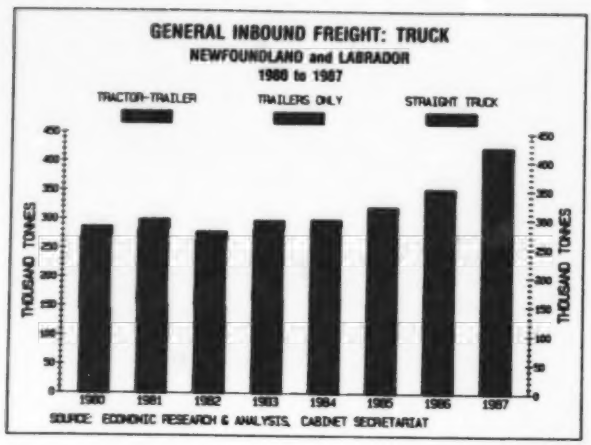
Transport Canada (Chartered Services)

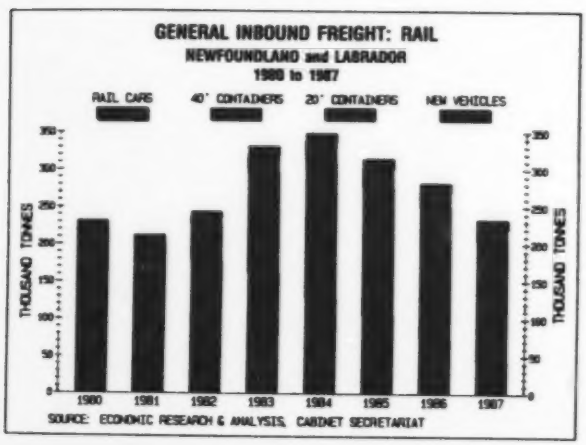
Marine Voyager	Passenger & Freight Ferry (Placentia Bay)
Northern Princess	Vehicular Ferry (Blanc Sablon/St. Barbe)
Challenge I	Passenger & Freight Ferry (Jackson Arm-Harbour Deep)

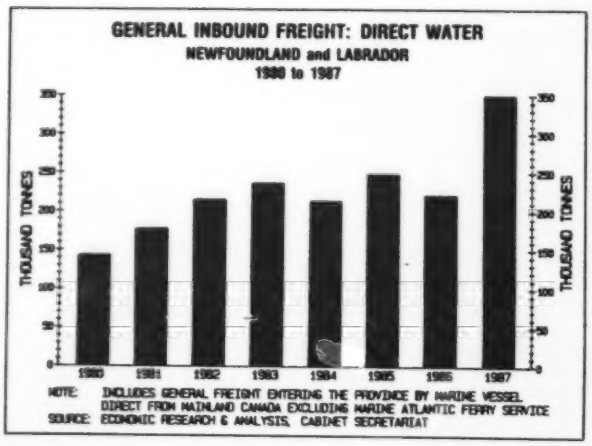
(1) These vessels are regularly scheduled in North Coast service.
(2) On charter for one month during 1987.
(3) Replaced Sir Robert Bond and Astron during 1987.

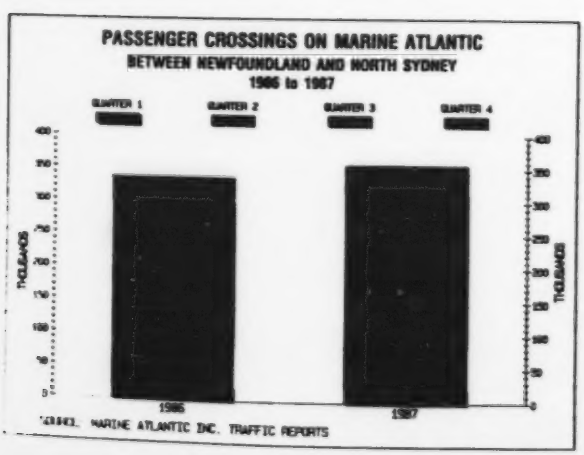
Source: Department of Transportation and Economic Research and Analysis Division, Cabinet Secretariat.

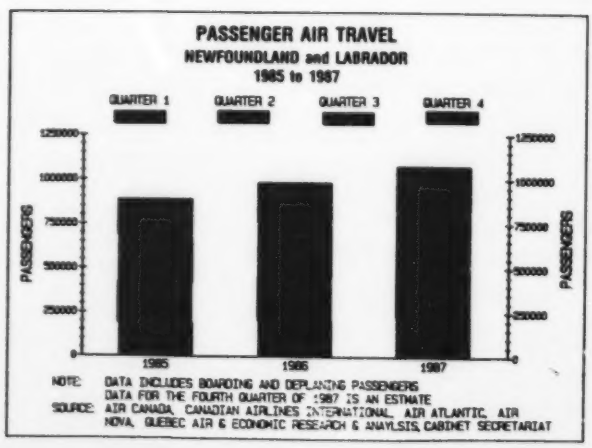

COMMERCIAL VEHICLE CROSSINGS ON MARINE ATLANTIC
BETWEEN NEWFOUNDLAND AND NORTH SYDNEY
1986 to 1987
QUARTER 1
QUARTER 2
QUARTER 3
QUARTER 4
THOUSANDS
1986
1987
SOURCE: MARINE ATLANTIC INC. TRAFFIC REPORTS

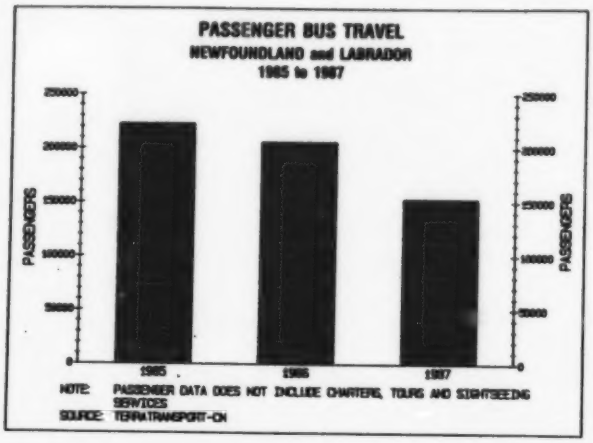

GENERAL INBOUND FREIGHT: TRUCK
NEWFOUNDLAND and LABRADOR
1980 to 1987
TRACTOR-TRAILER
TRAILERS ONLY
STRAIGHT TRUCK
THOUSAND TONNES
1980
1981
1982
1983
1984
1985
1986
1987
SOURCE: ECONOMIC RESEARCH & ANALYSIS, CABINET SECRETARIAT

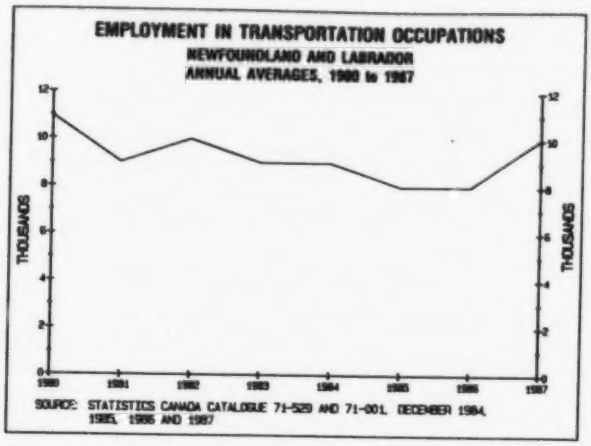

GENERAL INBOUND FREIGHT: RAIL
NEWFOUNDLAND and LABRADOR
1980 to 1987
RAIL CARS
40' CONTAINERS
20' CONTAINERS
NEW VEHICLES
THOUSAND TONNES
1980
1981
1982
1983
1984
1985
1986
1987
SOURCE: ECONOMIC RESEARCH & ANALYSIS, CABINET SECRETARIAT


GENERAL INBOUND FREIGHT: DIRECT WATER
NEWFOUNDLAND and LABRADOR
1980 to 1987
THOUSAND TONNES
1980
1981
1982
1983
1984
1985
1986
1987
NOTE: INCLUDES GENERAL FREIGHT ENTERING THE PROVINCE BY MARINE VESSEL DIRECT FROM MAINLAND CANADA EXCLUDING MARINE ATLANTIC FERRY SERVICE
SOURCE: ECONOMIC RESEARCH & ANALYSIS, CABINET SECRETARIAT


PASSENGER CROSSINGS ON MARINE ATLANTIC
BETWEEN NEWFOUNDLAND AND NORTH SYDNEY
1986 to 1987
QUARTER 1
QUARTER 2
QUARTER 3
QUARTER 4
THOUSANDS
1986
1987
SOURCE: MARINE ATLANTIC INC. TRAFFIC REPORTS


PASSENGER AIR TRAVEL
NEWFOUNDLAND and LABRADOR
1985 to 1987
QUARTER 1
QUARTER 2
QUARTER 3
QUARTER 4
PASSENGERS
1250000
1000000
750000
500000
250000
0
1985
1986
1987
NOTE: DATA INCLUDES BOARDING AND DEPLANING PASSENGERS
DATA FOR THE FOURTH QUARTER OF 1987 IS AN ESTIMATE
SOURCE: AIR CANADA, CANADIAN AIRLINES INTERNATIONAL, AIR ATLANTIC, AIR NOVA, QUEBEC AIR & ECONOMIC RESEARCH & ANAYLSIS, CABINET SECRETARIAT


PASSENGER BUS TRAVEL
NEWFOUNDLAND and LABRADOR
1985 to 1987
PASSENGERS
250000
200000
150000
100000
50000
0
1985
1986
1987
NOTE: PASSENGER DATA DOES NOT INCLUDE CHARTERS, TOURS AND SIGHTSEEING SERVICES
SOURCE: TERRATRANSPORT-CN


EMPLOYMENT IN TRANSPORTATION OCCUPATIONS
NEWFOUNDLAND AND LABRADOR
ANNUAL AVERAGES, 1980 to 1987
THOUSANDS
12
10
8
6
4
2
0
1980
1981
1982
1983
1984
1985
1986
1987
SOURCE: STATISTICS CANADA CATALOGUE 71-529 AND 71-001, DECEMBER 1984, 1985, 1986 AND 1987

Appendix 4

SELECTED ECONOMIC INDICATORS:

NEWFOUNDLAND AND LABRADOR, 1984-1988

Appendix 4

SELECTED ECONOMIC INDICATORS: 1984-1988
NEWFOUNDLAND AND LABRADOR

	1984	1985	1986	1987e	1988f
Gross Domestic Product at factor cost					
(millions of current $)	5,473	5,750	6,127	6,569	7,002
% change - Current $	10.8	5.1	6.6	7.2	6.6
Gross Domestic Product at factor cost					
(millions of constant $)	4,439	4,564	4,609	4,729	4,833
% change - Constant $	5.0	2.8	1.0	2.6	2.2
Personal Income					
(millions of current $)	5,773	6,187	6,600	7,088	7,407
% change - Current $	5.6	7.2	6.7	7.4	4.5
% change - Constant $	1.2	2.9	3.6	4.4	1.3
Retail Trade					
(millions of current $)	2,071	2,254	2,407	2,680	2,841
% change - Current $	5.1	8.8	6.8	11.3	5.0
% change - Constant $	0.7	4.5	3.7	8.2	2.7
Gross investment					
(millions of current $)	2,423	2,459	2,440	2,519	2,635
% change - Current $	9.2	1.5	-0.8	3.3	4.6
% change - Constant $	6.4	-1.7	-3.4	0.6	1.6
Labour Force (000's)					
Annual Average	221	224	226	228	230
% change	3.3	1.4	0.9	0.9	0.9
Employment (000's)					
Annual Average	176	176	181	186	190
% change	1.1	0.0	2.8	2.8	2.2
Unemployment Rate (%)					
Annual Average	20.5	21.3	20.0	18.6	17.4
% change	9.0	3.9	-6.1	-7.0	-6.5
St. John's Consumer Price Index					
Annual Average (1981 = 100)	122.7	127.8	131.6	135.4	139.7
% change	4.4	4.2	3.0	2.9	3.2

f: forecast
e: estimate

Note: In some cases, the percentage change may be calculated using unrounded numbers.

Source: Statistics Canada; Newfoundland Statistics Agency and Economic Research and Analysis Division, Cabinet Secretariat.